

## Determinants of Purchase Intention in Plant-Based Seafood Products Among Generation Z in Malaysia

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### Abstract

*The increasing apprehensions regarding the depletion of marine life and exploitation in Malaysia have prompted the proposal of plant-based aquaculture as a prospective resolution. In order to successfully penetrate the Malaysian market with plant-based seafood, it is imperative to conduct an in-depth examination of the factors that influence consumers' purchasing intentions. The aim of this research endeavour is to examine the factors that influence the intention of Generation Z consumers in Malaysia to buy plant-based seafood. By employing the theory of planned behaviour (TPB) as a conceptual framework, this research achieved its objective and examined the impacts of five discrete independent variables namely, attitude, subjective norms, perceived behavioural control, food safety, and environmental concern on one another. In Malaysia, 384 online surveys completed by members of Generation Z were compiled for this investigation. The Statistical Package for the Social Sciences (SPSS) was utilised in this investigation. The findings suggest that purchase intent is significantly influenced by factors such as attitude, perceived behavioural control, food safety, and environmental concern, as opposed to subjective norms. The findings of the multiple regression analysis indicate that purchase intent cannot be predicted by every single one of the independent variables examined in this article.*

**Keywords:** *Sea, Plant-based seafood, Purchase intention, Fishery, Sustainable food consumption, Theory of Planned Behaviour, Malaysia, Marine.*

### Introduction

As consumer awareness of environmental sustainability practices has increased, plant-based foods have emerged to capitalise on this trend. Plant-based seafood has become an increasingly viable and ethical option in comparison to conventional seafood, as an increasing number of consumers seek alternatives that are environmentally benign and consistent with the concept of sustainability. The term "plant-based" was initially introduced by T. Colin Campbell participated in a 1980 study examining the impact of a vegetable-based diet on cancer (Sweegen, 2022). In contrast to conventional food, the consumption of "plant-based" foods is regarded as a sustainable practice and provides consumers with an eco-friendly option (Bakar et al., 2023). The progression of this particular dietary pattern has been substantial in recent decades and has had a profound effect on the food industry.

The potential of the plant-based market has been acknowledged by marketers, resulting in the development of numerous plant-based cuisines, such as plant-based seafood, as viable alternatives. Marwaha et al. (2020) defined "plant-based seafood" as a product derived from plants, including fungi and algae that are intended to replace or supplement harvested seafood. Simke (2020) provides an additional elucidation on the constituents of plant-based seafood, encompassing legumes, yeast, soy, seaweed, carbohydrates, and vegetable oil, among others. This plant-based substitute accurately reproduces the flavour, texture, and appearance of authentic seafood, such as scallops, salmon, tuna, and prawns. In summary, plant-based seafood enables more efficient seafood production and distribution without requiring the use of actual marine life; rather, it is produced by simply transforming plant resources into seafood. The nutritional value

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of seafood is particularly beneficial to cardiovascular health. It is rich in essential vitamins and minerals, including vitamin D, and is low in saturated fat (1 percent). Seafood is one of the few foods that can provide human health-promoting omega-3 fatty acids (Hu & Chan, 2020). Plant-based seafood does, in fact, offer comparable nutritional value to conventional seafood, including Omega-3 fatty acids. Algae, a constituent of plant-based seafood, has the potential to supply consumers with Omega-3 fatty acids (Hamlett, 2023). Furthermore, the manufacturing process of algae is more environmentally sustainable, as it eliminates mercury contaminants that were present in fish (Galler, 2023). The plant-based industry on a global scale exhibits considerable potential and promise. According to this study, plant-based cuisine is expected to experience significant expansion and generate 77.8 billion U.S. dollars in revenue by 2025 (Wunsch, 2024).

The implementation of plant-based seafood provides individuals who desire to adopt such a diet with an environmentally friendly and sustainable substitute (Mahmud et al., 2024). This is a situation that benefits both society and the environment, as it satisfies market demand while simultaneously advocating for sustainable practices. Furthermore, it is consistent with the Sustainable Development Goals (SDGs), particularly SDG 14: Life Below Water, which emphasises the critical nature of conserving, protecting, and preserving such resources. Although the plant-based seafood has the capacity to satisfy the demand for conventional seafood, it also helps alleviate the pressing problem of exploitation. Malaysia is a nation with a significant demand for seafood. In the year 2022, it made a contribution of RM11.5 billion (approximately 2.5 billion USD) to the gross domestic product (GDP) (Bedi, 2024).

According to a report published in 2022 by the Food and Agriculture Organisation of the United Nations, an estimated 95% of the global fish stock is impacted by overfishing or fishing to its biological limit. In this regard, Malaysia is positioned sixth among ASEAN nations in terms of captured fisheries (Selan, 2021). This report detailed a detrimental fishing method that posed a threat to the biodiversity and ecosystem of the ocean, including the extinction of specific marine species. Additionally, the demand for seafood has exceeded the supply that is currently available. In addition to exploitation, climate change-induced sea level rise, ocean acidification, and ocean temperature have all contributed to the extinction of marine species and ecosystems (Razak & Sinnappan, 2022). The aforementioned environmental issues affect marine organisms, including salmon. The aforementioned environmental challenges have a profound effect on reproductive behaviours, habitats, and migration patterns, ultimately resulting in atypical behaviour and the extinction of marine species (Harun et al., 2023). Indeed, the overfishing predicaments are considerably more severe than initially perceived. Local news (Bedi, 2024) quoted a local fisherman as saying that capturing the same number of fish as in the past has become exceedingly difficult. Table depicts the quantity of fisheries production in Malaysia, indicating a decline in the quantity of fish that fishermen can capture.

**Table 1: Total Fisheries Production in Malaysia by Quantity (MT)**

	2020	2019	2018	2017	2016	2015
Total	1,788,940	1,872,797	1,846,530	1,897,305	1,987,682	1,998,251
Capture Fisheries	1,388,923	1,461,015	1,455,066	1,470,290	1,580,295	1,491,975
Marina Capture	1,383,297	1,455,446	1,488,977	1,456,113	1,574,447	1,486,051
Inland Capture	5,626	5,569	6,089	5,177	5,848	5,924
Aquaculture	400,017	411,782	391,464	427,015	407,387	506,276

Source: Southeast Asian Fisheries Development Center (2022)

The referenced source is the Southeast Asian Fisheries Development Centre (2022). The average catch of seafood in a single trip has decreased from 100 kg to 2-4 kg (San, 2023). Additionally, many Malaysian fishermen claim that it has become increasingly common to return from their trips empty-handed, resulting

in enormous losses (Bedi, 2024). Although climate change and other factors have contributed to marine life depletion, local news outlets have identified overfishing as the primary cause.

To effectively generate purchase intent, it is critical to examine the determinants that influence Malaysian consumers' intentions to purchase plant-based seafood. Diverse factors may motivate individuals to select plant-based seafood. Although environmental or food safety considerations may motivate some Malaysians to choose plant-based seafood, others may do so out of personal preference. Additionally, specific segments of the Malaysian population may be inquisitive about novel culinary choices that enable them to experience an entirely different dietary milieu. Further research is required to identify the determinants that influence the intention to purchase plant-based seafood, particularly among Generation Z, the demographic group that is most interested in this topic in Malaysia.

According to Kamenidou et al. (2019), the individuals born between 1995 and 2009 are referred to as Generation Z. This generation was the focus of Tjiptono et al.'s (2020) research due to the fact that it comprises 29% of the total population in Malaysia, the largest demographic group. The eldest members of this generation have reached adulthood and have been employed for an extended period of time, which confers a degree of purchasing power. Targeting Generation Z will be a priority as they are poised to dominate society and transform the world, similar to previous generations. It is critical to shape this generation's buying behavior toward plant-based seafood as early as possible. Successful targeting of this largest population will promote sustainable consumption among Malaysians. Promoting sustainable fishing and seafood consumption is crucial for preserving our current resources for future generations. Malaysia's current predicament regarding the depletion of marine life underscores the urgency of investigating the underlying factors that drive individuals to purchase plant-based seafood alternatives as a means of addressing this critical issue. This research aims to examine the impact attitude, subjective norms, perceived behavioural control, environmental concern, and food safety, to forecast the intention of Generation Z in Malaysia to purchase plant-based seafood.

## Literature Review

### *Theoretical Framework of Planner Behaviour Theory (TPB)*

Ajzen (1991) utilised the Theory of Planned Behaviour (TPB) as a cognitive model to forecast behaviour and intention, aiming to elucidate the motivations behind individuals' engagement in specific actions. This study extensively use the TPB, or purchase intention framework, a widely recognised social psychological theory, to analyse consumer behaviour, particularly the purchase intention of specific products. The objective of this paper is to examine the determinants that impact the intention to purchase plant-based seafood. The TPB, which takes into account individuals' SN, PBC, and ATT, all of which are critical in shaping intentions, will serve as a foundational theory to support this topic (Bakr et al., 2023).

### *Attitude (ATT) and Intention (INT) to Purchase:*

ATT is the most significant determinant of consumer purchase intentions for plant-based alternatives, according to research. Ultimately, a consumer's level of nutritional knowledge positively influences their purchase intention for plant-based alternatives, thereby influencing their attitudes (Kopplin & Rausch, 2022). This paper also suggests that positive attitudes are formed while the consumer is simultaneously attracted to the product and influenced by social norms. The relationship between attitude-to-consumer-transaction (ATT) and consumer behavioural intention is contingent upon the favourable or unfavourable impact of underlying factors, according to Ma and Chang (2022). Positive attitudes and consumer purchase behavior occur when the sustainable and environmentally friendly attributes of a product align with consumer expectations. Chen (2022) concurs with this notion regarding the positive correlation between consumer attitudes and the intention to purchase plant-based substitutes. Despite the recognition of attitudes as a significant determinant in consumer purchasing behaviour regarding plant-based alternatives, a scholarly article argues that attitudes in isolation do not guarantee behavioural change (Faber et al., 2020).

Naysary et al. (2020) in their study examined how the implementation of the Shari'ah Governance Framework (SGF) improves the practices of Shari'ah governance in Islamic banks in Malaysia and addresses associated issues. Xu et al. (2024) employ bibliometric analysis to examine historical and current research patterns in the areas of energy transition and green finance, while also projecting potential future areas of study. Tan et al. (2019) examined the purchase intention of health supplements in Malaysia. Perceived necessity for the product or service is considered to constrain purchase intention. Moreover, even if the expressed attitudes were favourable, they might prove to be superfluous in the present circumstances.

### *Developing of Hypotheses*

*Subjective Norms (SN) and Intention (INT) to Purchase:* Chen (2022) and Hoang et al. (2019) both suggest that there exists a positive correlation between purchase intention and Subjective Norms (SN) relative to the former. A positive correlation between the two variables was also demonstrated in other studies (Ahmed et al., 2021). Canova et al. (2020) report that the strongest positive correlation exists between SN and purchase intent. Rosenlow and Hansson (2020) found that purchases of plant-based products are significantly influenced by the opinions and intentions of family and acquaintances. The significance of these social groups in the context of the purchase decision-making process is demonstrated by these results.

A larger purchase intention will result when a member of an individual's social group voices a favourable sentiment regarding a particular purchase decision. Ahmed et al. (2021) found that influences from one's environment, social circle, or family can have a substantial impact on the intention to purchase plant-based products in Malaysia. However, according to a 2021 study by Pandey et al., subjective norms have little impact on consumers' intentions to purchase plant-based alternatives such as yoghurt substitutes.

*Perceived Behavior Control (PCB) and Intention to Purchase (PI):* The notion of PBC, which takes into account both internal and external facilitators and barriers that impact an individual's intention to partake in a specific behaviour, is regarded as indispensable for determining said intentions (Ajzen, 1991). A positive correlation has been observed between PBC and the intention to purchase sustainable products, according to Stollar et al. (2022). Ahmed et al. (2021), for instance, conducted research that provides support for this concept. The majority of research conducted since 2019 demonstrates that PBC and PI are positively correlated. However, in order to conduct this study, the literature review must be traced back to a previous period, specifically to Al-Swidi et al. (2014), who determined that there is no statistically significant relationship between PBC and PI. Al-Swidi et al.'s conclusion that the correlation between PBC and organic food is likewise statistically insignificant is corroborated by a separate publication (Zhu, 2018). This study aims to establish a positive correlation between PBC and the intention to purchase plant-based seafood, mirroring the positive correlation between PBC and other sustainable food products that this study previously identified.

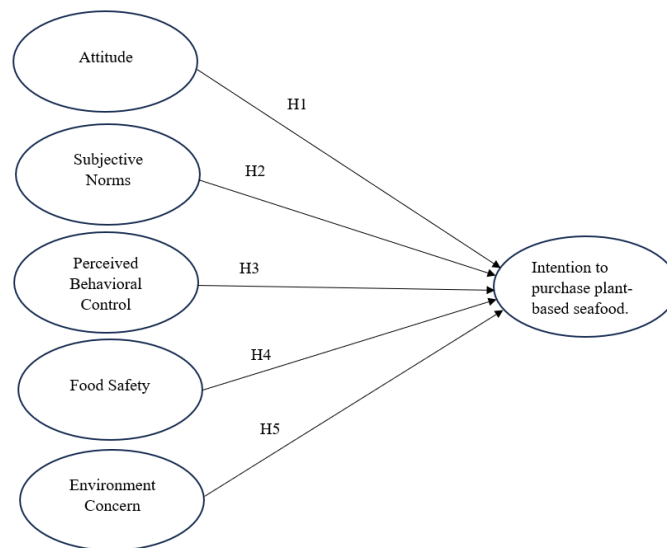
*Food Safety (FS) and Purchase Intentions:* The correlation between FS and consumer purchase intentions regarding sustainable food products, such as organic food, has been investigated by researchers. According to a number of research findings, FS has been a significant determinant of consumer intent to purchase sustainable food products. Scholars including Qi and Ploeger (2021) and Iqbal et al. (2021) have established a substantial correlation between FS and the intention to purchase sustainable food items, including organic and green foods. Further, Qi and Ploeger (2021) explain that the purchase of green food was motivated by the perception that it was safer and healthier; indicating that consumer purchase intent towards sustainable food was significantly influenced by this perception. Moreover, individuals who exhibit a strong commitment to FS are more likely to express a desire to buy natural or environmentally favourable products (Teng & Lu, 2016). An additional study by Alam et al. (2022) similarly reported results indicating a positive correlation between the aforementioned variables within the Malaysian market.

The results of this study underscored the significance of FS in influencing consumer intentions to purchase sustainable food items, such as seafood derived from plants. In contrast to the findings of the majority of studies, Tandon et al. (2020) propose an explanation which posits that the intention to purchase sustainable

food products, such as organic products, is not significantly impacted by food safety. Insufficient research has been conducted to explore the profound correlation between food safety and the intention to purchase sustainable food products.

*Environmental Concern (EC) and Intention to Purchase:* Environmental consciousness (EC) has become a significant topic of discussion at an international level in recent years. As a result, EC has a substantial impact on the purchase intentions of consumers. Previous studies (Ahmed et al., 2021; Wojciechowska-Solis & Barska, 2021) have established a positive association between environmental consciousness (EC) and the propensity to purchase ostensibly sustainable products, such as organic food items. The results emphasise the considerable impact that environmentally responsible products exert on the intentions of consumers to make purchases. Although previous research has indicated a positive correlation between EC and PI, Angwyn et al. (2022) and Kopplin and Rausch (2022) present divergent conclusions. Angwyn et al. (2022) establish that a negative correlation exists between the two variables. This indicates that in Malaysia, there are no discernible direct or indirect impacts of EC on the PI of plant-based alternatives. Based on the extant literature that has established a positive correlation between EC and PI with respect to sustainable food products, it is rational to expect a comparable result with respect to EC and the intention to buy plant-based seafood. The limited availability of research that supports this inquiry emphasises the criticality of this EC in bridging the divide in knowledge.

Based on the literature above, the following conceptual framework is drawn (Figure 1) to establish the theoretical relationship between the dependent variable and the independent variables.



**Figure 1: Conceptual Framework**

The following hypothesis has been formulated based on the literature review and the conceptual framework.

- Hypothesis 1: There is a significant relationship between attitude and purchase intention.
- Hypothesis 2: There is a significant relationship between attitude and purchase intention.
- Hypothesis 3: There is a significant relationship between perceived behaviour control and purchase intention.
- Hypothesis 5: There is a significant relationship between environment concern and purchase intention.

- Hypothesis 4: There is a significant relationship between food safety and purchase intention.

## Research Methodology

The research population consists of Malaysia's Generation Z youth living in Malaysian cities such as Kuala Lumpur, Johar Bahru and Putra Jaya. This study examines determinants of purchase intentions among Generation Z affecting brand equity using these adults as the unit of analysis. To ensure the exclusion of individuals from generations other than Generation Z, it is imperative to begin Section A with screening statements as the first question. This statement provides clarification that participation is not mandatory for individuals below the age of 15 or above the age of 29. This study will request respondents to provide their age in Section A to verify their affiliation with Generation Z. By employing this screening process, the data collected will be more dependable and precise. The present researcher formulated the item statement in the questionnaire by drawing on an item statement from previous research. This study provides a softcopy of the questionnaire, which allows a subset of the respondents to complete the final survey electronically. This study developed the online questionnaire using Google Form and distributed it to eligible respondents via email and online platforms such as Twitter, Facebook, WhatsApp, or Instagram. The distribution process will include a link to the Google Form, enabling respondents to access it.

study was conducted in a natural setting without artificial manipulation or control (Saunders, et.al, 2016). Based on Krejcie and Morgan (1970), a sample size of at least 384 is required for a population of about one million people. Since data will be collected only once, this study is cross-sectional (Saunders et al., 2016). Non-probability sampling was employed due to its ease of access, time efficiency, and cost-effectiveness (Taherdoost, 2016).

Once the questionnaire has undergone the revision process that is informed by both the pre-test and the pilot test, it was refined and completed. Section A inquires into the demographic characteristics of the respondents, whereas Section B comprises broad inquiries concerning plant-based seafood. The purpose of the inquiries in Section C is to evaluate the viewpoint of the participant regarding the items that are utilised to quantify all variables. In Section C, this research endeavour will employ the commonly utilised 5-point Likert scale to enable participants to express their degree of concurrence with each inquiry. Respondents will be requested to assess each query on a five-point scale, from one to five, for the purposes of this study. Points 1 through 3 denote varying degrees of agreement with the given statement: point 1 signifies "strongly disagree," point 2 "disagree," point 3 "neutral" (neither agreeing nor disagreeing), point 4 "respondents' disagreement" with the statement," and point 5 "strongly agree." The 5-Likert scale is extensively employed in purchase intention research, specifically in marketing and consumer behaviour studies, according to Ahmed et al. (2021).

### *Data Analysis*

### *Descriptive Results*

In this section of the survey, 384 respondents participated in total; no excluded data was identified. This is because respondents were willing to provide a comprehensive set of information by completing each measuring item. This study will examine the respondents' demographic profile prior to data analysis.

**Table 2: The Respondent's Demographic Profile**

	Frequency	Percent (%)
<b>Age</b>		
15-19 years old	15	3.9
20-24 years old	185	48.2
25-29 years old	184	47.9

<b>Gender</b>		
Male	195	50.8
Female	189	49.2
<b>Ethnicity</b>		
Chinese	339	88.3
Indian	21	5.5
Malay	24	6.3
<b>Marital Status</b>		
Married	14	3.6
Single	370	96.4
<b>Monthly Income</b>		
Below RM1,500	55	14.3
RM 1,501 - RM 3,000	44	11.5
RM 3,001 - RM 5,000	216	56.3
RM 5,001 above	69	18.0
<b>Educational Level</b>		
SPM	63	16.4
STPM/ Diploma/ Foundation	101	26.3
Bachelor's degree	199	51.8
Postgraduate	8	2.1
Others	13	3.4
<b>Occupation</b>		
Employed	265	69.0
Self-employed	26	6.8
Unemployed	17	4.4
Housewife/ Husband	2	0.5
Others	74	19.3
<b>Familiarity with plant-based seafood</b>		
Yes	293	76.3
No	91	23.7
<b>Purchase Experience</b>		
Yes	146	38.0
No	238	62.0
<b>Purchase Frequency</b>		
Everyday	0	0.0
Sometimes	56	14.6
Frequently	17	4.4
Rarely	73	19.0
None	238	62.0
<b>Dietary Habit</b>		
Non-vegetarian Balance Diet	294	76.6
Non-vegetarian Mainly meat	79	20.6

Vegetarian	11	2.9
Total	384	100.0

The demographic distribution of the respondents is presented in Table 2. Approximately 15 participants (3.9%) indicated that they are between the ages of 15 and 19, whereas the proportions of those between the ages of 25 and 29 are comparable (185 and 184 respondents, or approximately 48.2% and 37.9%, respectively). In comparison to the 195 male respondents (50.8%), there are approximately 189 female respondents (49.2%). With a total of 339 (88.3%), Chinese respondents comprised the largest proportion of the sample, followed by 24 Malay respondents (6.3%). With a mere 21 respondents (or 5.5%), the Indian demographic group comprised the smallest amount of participants.

In relation to marital status, the proportion of respondents who indicated they were single was the highest, comprising 370 individuals, or 96.4% of the total. Only 14 out of 384 respondents were married, or 14% of the marital status distribution percentage. 216 respondents (or 56.3% of the sample) reported a monthly income ranging from RM 3,001 to RM 5,000. The largest segment had income levels of RM5,001 or higher. However, the group of respondents with the highest educational level consisted of those holding bachelor's degrees, comprising around 199 individuals (51.8%). Following this, 101 respondents (26.3%) held a STPM, diploma, or foundation, which constituted the second largest group. SPM holders comprised 63 respondents (16.4%), while the remaining 13 respondents (3.4%) belonged to other educational levels. Lastly, the smallest number of respondents was eight.

The objective of Section B of the survey is to ascertain the extent to which respondents are acquainted with and have experience with plant-based seafood. In this segment, participants are queried regarding their level of knowledge regarding plant-based seafood, their purchasing history, the regularity of their purchases, and their dietary patterns. Among the 384 participants surveyed, 293 (76.3%) indicated knowledge and awareness of plant-based seafood, whereas 91 (23.7%) stated ignorance of the concept. Despite the fact that approximately 76.3% of the participants have encountered this particular type of plant-based seafood, a mere 146 respondents (38.0%) claim to have previously purchased such seafood. The remaining 238 respondents (62.0%) state that they have no experience with such purchases.

In light of the fact that 238 respondents have no prior experience purchasing plant-based seafood, this group's purchasing frequency represents 62.0% of the total purchase frequency and indicates no purchase frequency. In contrast, 73 respondents (19.0%) reported purchasing plant-based seafood infrequently. A total of 56 respondents (14.6%) indicated that they occasionally buy plant-based seafood. This was followed by 17 respondents (4.4%) who reported purchasing plant-based seafood on a regular basis.

#### *Test of Reliability*

This study performed a Cronbach's alpha test for assessment of reliability of instrument on the 384 respondents to assess the dependability of the gathered data. As stated previously, a Cronbach's alpha value threshold of 0.7 or higher indicates acceptable and reliable results. The results shown in Table 3, which is the Cronbach's alpha reliability test result for the primary survey, show that all variables are higher than the 0.7 level, which means the study is consistent and reliable (Umaji & Paireekreng, 2023).

**Table 3: Cronbach's Alpha test of Reliability**

Variables		Cronbach's Alpha	Number of Items
Independent Variables	Attitude	0.874	4
	Subjective Norms	0.838	4
	Perceived Behavioral Control	0.789	4
	Food Safety	0.862	4



	Environmental Concern	0.889	4
Dependent Variables	Purchase Intention	0.883	5

### *Coefficients of Correlation*

This study performed a Pearson's correlation coefficient analysis to examine the association between IVs and DVs.

**Table 4: The Pearson's Correlation Coefficient results**

		ATT	SN	PBC	FS	EC	PI
ATT	Pearson Correlation	1					
	Sig. (2-tailed)						
SN	Pearson Correlation	.020	1				
	Sig. (2-tailed)	.695					
PBC	Pearson Correlation	.759**	-.016	1			
	Sig. (2-tailed)	<.001	.753				
FS	Pearson Correlation	.529**	.001	.502**	1		
	Sig. (2-tailed)	<.001	.980	<.001			
EC	Pearson Correlation	.677**	-.023	.656**	.708**	1	
	Sig. (2-tailed)	<.001	.654	<.001	<.001		
PI	Pearson Correlation	.784**	-.027	.806**	.583**	.748**	1
	Sig. (2-tailed)	<.001	.598	<.001	<.001	<.001	

The outcome of Pearson's correlation coefficient between IVs and DVs is presented in Table 4. Among all the IVs, perceived behavioural control has the most robust Pearson's correlation ( $r = 0.806$ ,  $p < .001$ ), indicating a statistically significant and strongly positive relationship. Thus, H3 is supported by this study, which demonstrates that a rise in perceived behavioural control results in a corresponding increase in purchase intention. The Pearson's correlation coefficient for attitude is 0.784, which is a highly positive and statistically significant correlation coefficient ( $r = 0.784$ ,  $p < .001$ ). This correlation coefficient ranks second among all IVs.

It subsequently demonstrated that a rise in attitude results in a corresponding rise in purchase intent, thereby supporting H1. An additional IV that exhibits a statistically significant and strongly positive Pearson's correlation ( $r = 0.748$ ,  $p < .001$ ) is environmental concern. It indicates that a rise in environmental consciousness will increase the intention to purchase and support H5. The results of the Pearson's correlation analysis for food safety are statistically significant and moderately positive ( $r = 0.583$ ,  $p < .001$ ). This result provided support for H4, suggesting that a moderate increase in purchase intent will result from an improvement in food safety. Ultimately, the Pearson's correlation coefficient for subjective norms is abysmally low, and its correlation with purchase intention is not statistically significant ( $r = -0.27$ ,  $p$ -value = 0.598). The H2 will subsequently be rejected by this study, suggesting that a rise in subjective norms will not result in a reduction in purchase intention.

### *Multiple Regression*

This study performed multiple regression analyses to determine whether attitude, subjective norms, perceived behavioural control, food safety, and environmental concerns significantly influence purchase intention. Consequently, this study has formulated the following hypothesis.

Hypothesis 6: Attitude, subjective norms, perceived behavioural control, food safety, and environmental concerns all substantially predict Generation Z's intention to purchase plant-based seafood in Malaysia.

This study regressed the dependent variable, representing Generation Z's intention to purchase plant-based seafood in Malaysia, to predict the independent variables, namely attitude, subjective norms, perceived behavioural control, food safety, and environmental concern. The model summary, as presented in Table 5: provides an indication of the strength of the relationship between the variables (SAGE Publications, Inc., 2019). The R<sup>2</sup> value of .765.

**Table 5: Multiple Regression Model Summary <sup>A</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.875 <sup>a</sup>	.765	.762	1.74798	.765	245.967	5	378	<.001	2.170

**Table 6: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3757.673	5	751.535	245.967	<.001 <sup>b</sup>
	Residual	1154.952	378	3.055		
	Total	4912.625	383			

- Dependent Variable: PI
- Predictors: (Constant), EC, SN, PBC, FS, ATT

Table 6 presents the ANOVA results. The purchase intention is significantly predicted by the independent variables ( $F(5, 378) = 245.967, p < .001$ ). This indicates that the five factors investigated have a substantial influence on the purchase intention. The model's significance level of less than 0.05 further suggests that random variation is unlikely to account for the variation it accounts for (SAGE Publications, Inc., 2019).

**Table 7: Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.421	.682		.618	.537	-.919	1.762
	ATT	.355	.053	.278	6.741	<.001	.252	.459
	SN	-.018	.022	-.020	-.808	.419	-.061	.025
	PBC	.470	.048	.396	9.874	<.001	.376	.563
	FS	.070	.049	.051	1.424	.155	-.027	.166
	EC	.335	.053	.264	6.257	<.001	.229	.440

- Dependent Variable: PI

Table 7: illustrates the significance of the coefficient results used to determine the degree of influence. There is a positive and statistically significant effect on purchase intention that is caused by attitude ( $B = 0.355, t = 6.741, p\text{-value} = .001$ ), perceived behavioural control ( $B = 0.470, t = 9.874, p\text{-value} = .001$ ), and environmental concern ( $B = 0.335, t = 6.257, p\text{-value} = .001$ ). Conversely, subjective norms ( $B = -0.18, t = -0.808, p = 0.419$ ) and food safety have the opposite effects.

In precisely, this study can express the multiple regression equation as follows:

$$Y = a + bx_1 + cx_2 + dx_3 + ex_4 + fx_5$$

∴ Purchase intention (Y) = 0.421 + 0.355 (attitude) – 0.018 (subjective norms) + 0.470 (perceived behavioural control) + 0.070 (food safety) + 0.335 (environmental concern)

**Table 8: Summary of Hypothesis Results**

H1	There is a significant relationship between attitude and the purchase intention of plant-based seafood among Generation Z in Malaysia.	Accepted
H2	There is a significant relationship between subjective norms and the purchase intention of plant-based seafood among Generation Z in Malaysia.	Rejected
H3	There is a significant relationship between perceived behavioral control and the purchase intention of plant-based seafood among Generation Z in Malaysia.	Accepted
H4	There is a significant relationship between food safety and the purchase intention of plant-based seafood among Generation Z in Malaysia.	Accepted
H5	There is a significant relationship between environmental concern and the purchase intention of plant-based seafood among Generation Z in Malaysia.	Accepted
H6	Attitude, subjective norms, perceived behavioural control, food safety, and environmental concerns all substantially predict Generation Z's intention to purchase plant-based seafood in Malaysia.	Accepted

## Results & Discussion

The principal objective of this research is to examine the factors that impact the intention of Generation Z consumers in Malaysia to buy plant-based seafood. Five factors have been designated as independent variables in this study: attitudes (ATT), subjective norms (SN), perceived behavioural control (PBC), food safety (FS), and environmental concern (EC). In order to address the research inquiries, this study developed hypotheses and collected 384 responses in total. Purchase intent is substantially and positively correlated with IVs such as attitude, perceived behavioural control, food safety, and environmental concern, according to the statistical result. This is due to the growing interest of Generation Z in Malaysia in plant-based seafood; thus, an increase in four of these IVs corresponded to a more pronounced intention to purchase. Nevertheless, subjective norms do not appear to have a substantial impact on the intention to purchase plant-based seafood. The findings indicated that purchase intention was most significantly correlated ( $r = 0.806$ ,  $p$  value  $< .001$ ) with perceived behavioural control. As such, H3 is deemed acceptable. This result is comparable to that of Pandey et al. (2021), who identified perceived behavioural control as the most influential predictor of purchase intent.

The positive correlation between perceived behavioural control and purchase intention is also supported by a number of prior studies, including those of Stollar et al. (2022), Ahmed et al. (2021), Saleki et al. (2020), and Aitken et al. (2020). This suggests that the purchase intention of Generation Z consumers will improve substantially when they perceive that they have control over the cost, availability, or convenience of plant-based seafood.

H1 and H5 are also supported by the results, which indicate that environmental factors ( $r = 0.748$ ,  $p$ -value  $= .001$ ) and attitude ( $r = 0.784$ ,  $p$ -value  $= .001$ ) are strongly associated with Generation Z in Malaysia's intentions to purchase plant-based seafood. Prior research (Canova et al., 2020; Chen, 2022; Kopplin and Rausch, 2022; Rosenlow and Hansson, 2020; Pandey et al., 2021) has established that purchase intention and attitude are positively correlated.

Generation Z consumers will have a greater intention to purchase plant-based seafood when the evaluation of the consequences of doing so is favourable (for instance, when previous experiences inform them that this type of plant-based product is beneficial to health). In addition, it is imperative for marketers to recognise the substantial impact that environmental consciousness has on the intention to purchase plant-based seafood, as supported by a number of prior research investigations (Ahmed et al., 2021; Chen, 2022; Wojciechowska-Solis and Barska, 2021). It highlights the considerable environmental consciousness and concern that Generation Z in Malaysia possesses. This result suggests that Generation Z in Malaysia is more cognizant of sustainability concepts, as evidenced by their increased intend to purchase environmentally friendly products. The findings indicate that subjective norms do not exert a statistically significant and positive impact on the intention to purchase plant-based seafood.

The consequence of this is the denial of H2. It was inconsistent according to a number of studies (Hoang et al., 2019; Chen, 2022; Ahmed et al., 2021; Canova et al., 2020; Rosenlow and Hansson, 2020), but consistent according to research from Pandey et al. (2021). In contrast to other IVs, this result indicates that there is no evidence of a significant linear relationship between SN and PI ( $r = -0.27$ ,  $p = 0.598$ ). The influence of behavioural beliefs (attitude) on purchase intention is more significant than that of normative beliefs (subjective norms), according to Kopplin and Rausch (2022). Based on this discovery, it appears that the existence of subjective norms may have a minimal or inconsequential impact on the intention to make a purchase.

The existence of such a negative relationship could potentially be attributed to the varied perspectives regarding plant-based products in Malaysia. Others perceived it as a wholesome and environmentally sustainable product, which resulted in a strong purchase intention, whereas some perceived it as less appetising and more expensive food, which was an undesirable consequence that led to a feeble purchase intention. Such a perplexing presentation of subjective standards subsequently results in a negligible and inconsequential decline in the intention to purchase plant-based seafood. Therefore, subjective norms exhibit a negative and inconsequential correlation with the intention to purchase plant-based seafood. This is due to the fact that an individual's strong belief and perception regarding plant-based products does not significantly affect the intention to purchase.

### *Implications*

The findings of this study indicate a strong and positive correlation between environmental consciousness and the intention to purchase plant-based seafood. This provides policymakers, including the government, with information that Generation Z possesses a considerable level of awareness regarding environmental protection. By highlighting environmental concerns, the government can effectively increase purchase intention and motivate individuals to support initiatives that promote environmental protection. Additionally, there exists a positive and statistically significant correlation between food safety and the intention to purchase plant-based seafood. While the correlation is not particularly strong, food safety remains a determinant of consumer purchase intentions and warrants greater governmental attention. This finding serves as an impetus for the government to prioritise food safety through the implementation of stringent regulations and requests aimed at guaranteeing food safety.

### *Theoretical Implications*

Future academics or researchers investigating the potential market for plant-based seafood among Generation Z in Malaysia will find this study's findings extremely beneficial. Research pertaining to plant-based products is currently scarce and not as well-known as that concerning sustainable alternatives such as organic food. This article will motivate researchers to further investigate the opportunities and possibilities associated with this category of plant-based products. This study provides Malaysia's food industry with significant data and insights about the determinants influencing Generation Z's intention to purchase plant-based seafood.

### *Managerial Implications*

The findings of this research assist marketers and food industry managers in anticipating the significant potential of plant-based seafood in Malaysia, while also revealing that food safety, attitude, perceived behavioural control, and environmental concern will all have a positive impact. Food marketers and managers should promote perceived behavioural control, which has the largest association with plant-based seafood purchase intention. PBC1, "I believe that plant-based seafood products can improve the surrounding environment," had the highest SPSS mean. Fostering a perception of environmental improvement can increase the purchase intention of plant-based seafood. However, marketers and managers in the food industry should ensure consumers view the outcome as desirable. The data suggests that Generation Z regards buying plant-based seafood as a sensible and desirable option with a favourable effect. The favourable consequence might be healthy or delicious. The production of plant-based seafood is vital to its acceptance. This plant-based fish should appear and taste like traditional seafood to fulfil customers' cravings. As mentioned, algae, one of plant-based seafood's constituents, contains omega-3 fatty acids, making it nutritionally comparable to traditional seafood. Education and promotion could help customers see a "healthy" result from plant-based seafood, which will encourage their purchase.

### **Conclusion & Future Research**

This study empirically employs the Theory of Planner Behaviour (TPB) framework while incorporating two supplementary constructs: environmental concern and food safety. This study hypothesises that by incorporating both food safety and environmental concern, this theoretical framework becomes more predictive in forecasting Generation Z's intention to purchase plant-based seafood in Malaysia. This analysis considers attitude, perceived behavioral control, environmental concern, and food safety.

A few research constraints are beyond this paper's control. This article focuses on five variables thought to impact Generation Z's plant-based seafood buying intention in Malaysia. In actuality, additional variables may impact plant-based seafood purchases. As noted, this model explains 76.50% of purchase intention variation, leaving 23.5% to other variables. Other variables like culture or religion may affect plant-based seafood purchases. Malaysians are diverse in colour, religion, and culture.

Understanding the food culture is crucial to targeting the right population. This study's respondents were mostly from one ethnic; hence its findings may primarily apply to Chinese society. Future research might monitor ethnic balance throughout surveying. It lets the final outcome be generalised to all races. Only Generation Z is studied, neglecting other age groups' markets. Future studies might examine different generations to determine the best target generation. However, to extrapolate the results, future investigations should use qualitative statistical methods and interviews. The quantitative research method in this paper limits respondents to predetermined options, whereas the qualitative survey allows them to provide more precise and accurate responses.

### **Disclosure of Interest**

No Conflict of Interest

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### **Data Availability Statement**

The authors confirm that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

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