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THE FACTORS THAT INFLUENCE THE PURCHASE INTENTION OF PLANT-BASED MEAT AMONG GEN Z IN MALAYSIA

BY

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is 10,658.

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DEDICATION

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PBM	Plant-Based Meat
Gen Z	Generation Z
EC	Environment Concern
HC	Health Concern
FS	Food Safety
WOM	Word-of-Mouth
ATT	Attitude
PI	Purchase Intention

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PREFACE

This final year project was established to fulfil the criteria for a Bachelor's degree (Hons) in Marketing from Universiti Tunku Abdul Rahman (UTAR). The research focus of this investigation is " The Factors That Influence the Purchase Intention of Plant-Based Meat Among Gen Z In Malaysia." In contemporary society, there is an increasing emphasis on environmental sustainability. The surge in carnivorous consumption has resulted in significant adverse implications for the ecosystem. Plant-based meat, recognized for its sustainable attributes, is experiencing a burgeoning popularity on a global scale. Therefore, it is becoming more and more important to investigate the factors that led Generation Z to choose plant-based meat substitutes. This study aspires to elucidate the impact of external elements on the viewpoints of Generation Z individuals in Malaysia and, consequently, their buying inclinations, presenting valuable insights for both academic and industrial sectors. The targeted marketing, policy, and strategic initiatives aimed at promoting the acceptance of plant-based meat alternatives among Malaysia's youth can be informed by these points of view.

ABSTRACT

The increasing world population leads to higher meat consumption, impacting the environment negatively. PBM market grows due to global demand, especially in Malaysia where awareness of environment and health is increasing. Factors like middle-class vegetarians, health-conscious youths, and religious beliefs drive the popularity of PBM in Malaysia. PBM have great potential to become popular. For the food sector to meet customer demand, product innovation in PBM is crucial. This study looks at what influences Malaysian Gen Z's decision to buy PBM.

Our study uses the Stimulus-Organism-Response (SOR) model to examine the factors influencing Gen Z Malaysia's desire to consume plant-based meat. The conceptual framework is rooted in the S-O-R model and consists of six factors, where attitude acts as a mediator (O) to clarify the cognitive mechanisms influencing consumer behavior. Through scrutinizing the interplay among environmental concerns, health considerations, and food safety as stimuli (S), alongside purchase intention as the behavioral response (R), our objective is to acquire insights into the decision-making dynamics of Malaysian Gen Z regarding PBM consumption.

In this research, data from 385 Malaysian Gen Z respondents were gathered using questionnaires. SmartPLS software was employed to analyze data and build models to examine variable relationships. Findings show a notable connection between most hypotheses, except for the one concerning food safety and its effect on Malaysians' interest in PBM. This research contributes to improving comprehension of factors impacting Gen Z in Malaysia and promotes initiatives to increase the focus and Gen Z Malaysian customers' intention to purchase PBM.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This section summarizes the research's background, problem, objectives and significance.

1.1Research Background

Plant-based meat is derived from plants only. The history of plant-based meat dates back to ancient Asian civilizations. The initial plant-based meat generation was in the 1960s, followed by a new generation designed for carnivores in recent years according to He et al. (2020). Non-traditional foods like plant-based meat products have unique sensory, chemical, and functional characteristics, including items like burgers and sausages (Sha & Xiong, 2020). In addition, plant-based meats contain essential fats and carbohydrates for humans. Various protein sources used for making include soy protein, wheat gluten, fermented protein, and microalgae (Kyriakopoulou et al., 2019; Sha & Xiong, 2020).

Statista reported global population at 7.95 billion in 2022, up from 7.89 billion in 2021(Appendix 1.1). Yitbarek (2019) forecasts a 70% rise in animal product demand by 2050 due to population growth. OECD data show global animal product consumption at 328,395 thousand tonnes in 2021. Consumption rose by 5,487 thousand tonnes in 2022, highlighting the link between population growth and increased demand for animal products (Appendix 1.2). Besides, from the context of Malaysia, based on data from Worldbank Malaysia's population was 33,938,221 in 2022, up 1.09% from the year before (Appendix 1.3). A rise in animal product demand is seen due to population growth. As a result, the OECD data indicates that

Malaysia's consumption of animal products grew by 2.055%, from 2,408.6 thousand tonnes in 2021 to 2458.1 thousand tonnes in 2022 (Appendix 1.4 &1.5).

However, In the upcoming decades, it is expected that the global average grazing area will increase significantly, impacting freshwater supplies globally according to Yitbarek (2019). Greenhouse gas emissions, land degradation, water pollution, and health hazards are all directly linked to increased meat production (Godfray et al., 2018). The heightened acknowledgement of the benefits related to the shift towards plant-based diets to address environmental effects within the food industry has spurred an increasing focus on plant-based food alternatives globally, particularly plant-based meat (Andreani et al., 2023; Grasso et al., 2020).There are continuous efforts to address environmental problems associated with cattle production, such as greenhouse gas emissions and climate change (Abu Bakar et al., 2023). Consuming PBM helps solve issues like freshwater usage and deforestation.

As environmental and health concerns have grown, so has the demand for PBM in Malaysia and throughout the world. Since the inception of GFI's market data in 2017, plant-based meat sales in the US have surpassed conventional meat sales. Tyson Foods and Nestle, renowned food and meat businesses, successfully launched and increased sales of PBM products (Good Food Institute, n.d.). The anticipated escalation of the worldwide market from $6.02 billion in 2022 to $28.57 billion by 2031 and the projected growth of the APAC market from $1.29316 billion in 2021 to $3.60429 billion in 2028 suggest a substantial increase in consumer adoption of PBM, as reported by Straits Research (2022) and Report Linker (2022).

The plant-based protein market in Malaysia grew at a 26.9% CAGR between 2018 and 2020. From $71.9 million in 2020 to $235 million in 2027, consumption is expected to soar (ConsumerIntel360, 2022). Plant-based protein demand and investments are expected to drive development in Malaysia, according to the Q4 2020 Global Plant Protein Survey. Incumbents are expected to introduce new products to maintain or enhance their market share. Nestle and Phuture, a Malaysian plant-based meat company, are expanding in Malaysia with the opening of Nestlé Malaysia's plant-based food production facility in ASEAN and Jalil's news report in (2022). In a segment with strong growth, food makers want to gain market portion. Success requires an understanding of strategic ambitions, product claims, ingredients, and customer preferences. The Malaysian plant protein sector is forecasted to expand by CAGR 17.6% from 2021 to 2027. Plant protein consumption in Malaysia is anticipated to rise from US$ 71.9 million in 2020 to US$ 235.0 million by 2027 (ConsumerIntel360, 2022), indicating a promising market potential for PBM products in Asia.

Furthermore, opportunities and trends in Malaysia may increase PBM's purchase inclination. Growing interest in PBM is a consequence of worldwide health patterns impacting middle-class vegetarians and Gen Z/millennials. (Austrade, n.d.). News insights by Austrade show Malaysians exposed to trends via social media and TV, with "Meatless Monday" gaining popularity. Notable, research by Abdul Rahman (2020) indicates significant environmental awareness and positive beliefs among Malaysian youth. In addition, vegetarianism is ingrained in Malaysian religions. In Buddhism and Hinduism, abstaining from meat is significant. Supermarkets are responding to the rise of vegetarianism and veganism. Aisles for vegetarian options are growing, making plant-based meat more available. Malaysian interest in plant-based protein will likely lead to buying PBM.

The growth of plant-based meat market inspires innovation in F&B industry. R&D is crucial for enhancing plant-based meat products. New products will meet diverse consumer preferences. Malaysia's F&B industry features plant-based meat prominently. Plant-based meat is popular for its health benefits worldwide and in Malaysia. Understanding Malaysian consumers' purchasing decisions for plant-based foods is crucial for future consumption.

1.2 Research Problem

People today have many meat options, including traditional and plant-based alternatives catering to various cultural and dietary preferences. While it is commonly believed that traditional meat still dominates the market due to consumer demand, plant-based meat has the same potential (Bryant et al., 2019). In fact, research conducted by Ignaszewski and Pierce (2023) reveals that between 2019 and 2022, the sales growth of plant-based food outpaced that of animal-based food (ABM) and overall food consumption. Furthermore, as evidenced by research indicating a growing interest in increasing plant-based food consumption and reducing meat consumption (Ignaszewski & Pierce, 2023). The Good Food Institute (2023) also reported that the sustained interest expressed by consumers, coupled with the clear demand for plant-based meat products, presents a promising opportunity for growth. Therefore, given the unprecedented and continuous growth of plant-based meat and the prevailing consumer trend,

it is pertinent for us to delve into the perspectives of Malaysians regarding plant-based meat and how their attitudes towards it impact their purchasing intentions.

An individual's intrinsic assessment of an entity, such as a branded commodity is known as attitude, and it has held significance in the field of marketing research since the 1960s (Sallam & Algammash, 2016). A relatively comprehensive and lasting evaluation of an object, a problem, a person, or an action is regarded as an attitude (Hoyer & MacInnis, 1997). Therefore, it is regarded as a valuable predictor of consumers' behavior towards products or services. To verify this, we intend to investigate the attitude as a mediator in our research.

The research uncovered that there exists a substantial connection between a person's level of knowledge regarding environmental concerns and their selection of plant-based meat (Jang & Cho, 2022). Besides, recent studies concur that using plant-based animal product alternatives can significantly reduce greenhouse gas emissions (Bryant, 2022). Additionally, Jang and Cho (2022) asserted that livestock husbandry has caused troubles associated to water and land consumption, and the biological activities of these animals (such as flatulence and eructation) have accelerated greenhouse gas production. Environmental problems lead to climate change, which is a global problem (Szenderák et al., 2022). Plus, the above evidence supports the claim that plant-based alternatives are better for the climate than animal products. Therefore, investigating the environmental influence of PBM is important by result that growing concerns about sustainability and climate change.

Rubio et al. (2020) asserted that meat serves as a significant source of nourishment. Nevertheless, excessive consumption of meat has been associated with numerous health problems. Every year, ischemic heart disease claims the lives of over 1.8 million individuals, and one-fourth of those deaths are linked to an excessive consumption of certain animal products. Besides, plant-based meat also contributes to preserving human health (Jang & Cho, 2022). Also, the Stanford School of Medicine discovered that individuals who switch from plant-based meat to animal meat within 8 weeks have a lower risk of cardiovascular disease. Consumption of plant-based meat may assist individuals seeking to lower their blood pressure, cholesterol, and body mass index (Rubio et al., 2020). With the rise of lifestyle-related diseases and increasing awareness of nutrition, understanding how consumers perceive the health advantages of PBM is essential. Therefore, our interest is piqued in comprehending the perspectives of Malaysian consumers toward it.

The increasing trend of PBM is attributed to the truth that these products were not easily infected with pathogens such as E.coli and Salmonella (New Food, 2022). Moreover, the USA Food and Drug Administration asserts that plant-based meat products have safe ingredients approved for people to eat (Rubio et al., 2020). The research of Clec (2022) also claimed that individuals may seek alternative foods that offer the same satisfaction as traditional options without the associated health risks, particularly since excessive consumption of processed meat has caused undesirable health outcomes. Plant-based meat will be a natural solution, allowing them to enjoy their favorite food while following health advice. Studying the impact of food safety on plant-based meat buying intention is important because of growing concerns about foodborne illnesses linked to traditional meat and consumers focusing more on safety. So, our study will explore this among Gen Z Malaysians.

Hanaysha and Pech (2018) asserted that word-of-mouth (WOM) plays a significant role in exerting an influence over consumer choice. The viewpoint of Yang et al. (2012) maintains that WOM serves as an efficacious and credible instrument for furnishing valuable information that can impact consumers' attitudes, perceptions, and purchasing behaviors. The extent of research conducted on the impact of WOM on PBM remains limited. Since consumers' opinions are crucial for the success of new food technology, the advancement and enhancement of WOM assume utmost importance. Consequently, it becomes imperative to investigate the manner in which word-of-mouth can influence customers' intentions to PBM consumption and addressing the dearth of Malaysian research in this domain.

Mohamed et al. (2017) posited that vegetarianism has historically thrived in Malaysia, particularly within the Chinese community. Meat alternatives gaining popularity due to their similar taste and texture to meat, lower calories, and ease of preparation. Consequently, vegetarianism, inclusive of meat alternatives, could potentially form a substantial market segment among non-vegetarian consumers in Malaysia. Plus, 61% of Malaysians surveyed affirmed their increased consumption of plant-based diets (Herbalife Nutrition, 2020). Moreover, Geoff King, the former CEO of The Food Purveyor, anticipates a surge of over 200% in plant-based sales in 2021 (Hassan, 2023). These statistics, along with the proliferation of brands in the industry, appear to suggest that Malaysians are increasingly open to exploring alternative food sources. However, Hassan (2023) contends that persuading Malaysians to embrace plant-based food poses challenges. Given the divergence of opinions in prior studies,

our research aims to delve deeply into the attitudes and purchasing inclinations of Malaysians towards plant-based meat.

Baron (n.d.) has defined Generation Z, as a group of consumers born between 1995 and 2012. A thorough examination of Generation Z is necessary because this particular generation holds a central position in today's society and bases their consumption choices on subjective factors. Furthermore, Generation Z places a significant emphasis on the value of the biosphere. The fact that they pay more attention to nature and the environment than the older generation, indicates a brighter future for the whole society. Furthermore, Van Loo et al. (2020) and other studies conducted in the United States have found that younger consumers show a greater preference for alternative meats. In the US, more younger generation purchases PBM and is more intent to consume it in various settings. Plus, it is worth noting that age and generation have been identified as significant variables that influence consumer behavior across various fields of study. Consequently, it is evident that there are many potential advantages in investigating the purchase intention of PBM in Gen Z. Additionally, the journal article by Jaafar et al. (2012) asserts that purchase intention is a useful tool in forecasting consumer purchasing behaviour. Similarly, purchase intention refers to consumers' tendency to buy specific products under certain conditions (Shah et al., 2012). Therefore, to forecast the purchasing decision, an investigation into the Gen Z’s purchase intention toward PBM is warranted.

1.3 Research Objectives and Research Questions

1.3.1 General Research Objective

The study explores factors influencing Gen Z consumers in Malaysia purchase intention towards plant-based meat through the SOR model, considering environmental concern, health concerns, food safety, and word-of-mouth. It indicates that customers' attitudes act as a mediator in this connection.

1.3.2 Specific Research Objectives

1. To investigate the relationship between environmental concern, health concern, food safety, word-of-mouth and attitude of Gen Z consumers in purchasing PBM.
2. To investigate attitude mediates on the relationship between environmental concern, health concern, food safety, word-of-mouth and purchase intention of PBM among Gen Z consumers in Malaysia.

1.3.3 Research Questions

1. Do environmental concern, health concern, food safety and word-of-mouth significantly influence Gen Z consumers' attitudes and their propensity to purchase plant-based beef in Malaysia?
2. Does attitude mediate the impact of environmental concern, health concern, food safety and WOM on the purchase intention of Gen Z consumers towards plant-based meat?

1.4 Research Significance

The study sought to explore the factors impacting Malaysian Gen Z's desire to buy plant-based beef.

1.4.1 To Practitioners

From the standpoint of a practitioner, this study will aid plant-based meat sellers in determining and comprehending consumers' purchasing intentions. We can understand the motivations behind someone's behavior by applying the SOR theory. It asserts that the majority of our actions are reflections of some stimuli that influence our inner feelings. Through the study of this theory, we can have a better comprehending of the relevant knowledge and technology in the field of plant-based meat, and also provide some guidance and support for the practical application of plant-based meat. This will also allow Malaysian plant-based meat sellers to comprehend the customers they are targeting more effectively and accurately develop and execute marketing plans based on SOR. Besides, the industry can pay greater attention to the crucial factors that influence consumers' purchasing intentions while eliminating unnecessary factors.

1.4.2 To Academics

Based on an academic aspect, this study gives a deeper understanding and insight into SOR concepts to discover the variables and reasons why Malaysians in Generation Z intend to purchase plant-based meat. This is because SOR can greatly assist us in understanding the reasons for an individual's behavior. The research on plant-based meat in domestic academic circles is relatively lacking, and there are only a handful of published articles. Hence, our study addresses existing plant-based meat research gaps and contributes to expanding knowledge within this industry. Furthermore, building upon prior research, this study delves further into the determinants of purchase willingness towards PBM , thereby offering a novel illustration for future scholarly investigations.

1.5 Conclusion

This section ends by summarizing the problem statement and providing a research overview. The research significance, objectives, and research questions are discussed. Research models, literature review, SOR model will be discussed in upcoming chapters. Hypothesis development will be described.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

By examining the SOR theory and establishing variables, the text investigates the factors impacting Malaysian Gen Z's desire in buying PBM. A conceptual framework will be presented, then the development and discussion of hypotheses in the final section.

2.1 Underlying Theory

This study explores influences on Gen Z in Malaysia's plant-based meat purchase intention through the SOR model. In 1974, Mehrabian and Russell developed the SOR model, offers a theoretical basis for environmental psychology. Moreover, Mehrabian and Russell (1974) connect SOR models with consumer behavior, emphasizing emotional responses such as arousal, pleasure, and dominance associated with environmental cues. Utilizing information rate, SOR models aid in comparing effects of various environments with multiple stimuli. Emotional response variables influence consumer behavior through behaviors and preferences (Mehrabian and Russell, 1974). Thus, the SOR model studies consumer purchase intentions through analyzing emotional reactions to environmental stimuli. It explains how stimuli (S) lead to behavioral responses (R) and emotional reactions (O). It involves evaluating different internal and external factors affecting individuals like attitude, emotion, perception, belief, motivation, and thinking (Sultan et al., 2021). Additionally, various response factors are considered, such as intention, behaviour, avoidance, and similar factors (Sultan et al., 2021). Various studies by Lee & Yun (2015), Sultan et al (2021), Vergura et al (2020), Qi & Ploeger (2021) used the SOR model to analyze consumer purchasing intentions, demonstrating its practicality in scrutinizing purchase intentions.

Nevertheless, most studies use Theory Planned Behavior (TPB) model to examine purchase intentions for plant-based meat. Chen (2022), Bakr et al. (2022), Abu Bakar et al. (2023), and Neumeister (2022) utilized TPB to analyze consumer purchase intention. Lee & Yun (2015) mentioned TPB focuses on rationality in decision-making. This allows cognitive techniques to predict behavior effectively. The study by Conner & Armitage (1998) proposed incorporating affective variables into existing theories. The SOR model allows examination of behavior influenced by cognitive and affective factors (Lee & Yun, 2015). However, limited research has used SOR models to explain customers' intentions to buy plant-based products. Therefore, the SOR model is suitable for this study.

In the SOR model, organism functions as a mediator representing attitude in research. Attitude serves as a bridge between antecedents and purchase intent, explaining psychological processes in consumer behavior. Lee & Yun (2015) argue that attitude represents the internal states of customers' cognitive and affective systems. Explaining the causes and processes of an observed correlation between two variables is the main objective of mediation analysis (Çabuk et al., 2014). Several studies conducted by Çabuk et al. (2014); Lee & Yun (2015) and Zaremohzzabieh et al. (2021), have proved a high correlation between the green and organic product’s purchase intention and attitude as a mediator. Therefore, to the extent of our knowledge attitude as a mediator is important in affecting consumers’ buying behaviour.

Environmental issues, natural content, sensory appeal, ecological warfare, nutrition, pricing, health concerns, and food safety are all examined under the SOR model in food literature (Lee & Yun, 2015; Liu & Zheng, 2019, Qi & Ploeger, 2021). The correlation among environmental concern, health concerns, and intent to purchase plant-based, organic, and green food has been extensively studied (Asif et al., 2018; Chen, 2022; Thanabordeekij & Kitiya, 2023). Previous research has explored the relationship between factors, but not specific attitudes mediating it. Chen (2022) suggests studying stimuli like food safety and word-of-mouth for future research. This study will examine environmental concern, health concern, food safety, and word-of-mouth in relation to consumers' attitude towards purchase intention.

2.2 Review of Variables

2.2.1 Purchase Intention (PI)

The research's dependent variable is purchase intention. Mentioned by Hasanah & Anjaningrum (2023), it is an individual's willingness to buy a certain commodity or product. It measures the likelihood of a buyer to make future purchases. Rezvani et al. (2012) explains purchase intention as an individual's inclination towards behaviors related to a brand, distinct from attitude, which reflects a person's perception of a product. Wang & Yang (2008) characterize purchase intention as actions or physiological occurrences reflecting an individual's attitude towards a specific product. Furthermore, Purchase intention and actual behaviour have a high positive link (Morwitz, 2012), albeit the exact relationship varies depending on many circumstances. Purchase intention is the inclination and determination of individuals to buy PBM products in the upcoming period.

2.2.2 Environmental Concern (EC)

Environmental concern, according to Ahmad et al (2018), refers to people's awareness, sensitivity, and willingness to act for environmental protection. It indicates the degree of worry, care, or interest individuals have regarding environmental conditions and the potential harm from human activities. Scholars like Bamberg (2003) view it as a single-dimensional attitude that significantly impacts cognitive processing, beliefs, and behavioral intentions. Furthermore, Diekmann & Franzen (2018) emphasize the correlation between environmental concern and individual awareness of environmental issues. Measurement methods vary depending on awareness of local and global ecological matters. Environmental concern in plant-based meat relates to individuals' dedication to protecting the environment by understanding ecological factors.

2.2.3 Health Concern (HC)

Shanawi Abdulsahib et al. (2019) provided a definition for health concern as an individual's awareness and concern for their own well-being. Giving personal health top priority involves being conscious of potential health risks related to specific goods or habits. Health concern is a key factor in the link between psychology and behavior, essential for selecting a nutrient-rich diet (Kang et al., 2015; Vassallo et al., 2009). Plus, health concern encompass uneasiness, distress related to health, and a propensity to report complications (Zimmerman et al., 2009). Regarding plant-based meat, health concerns arise from individuals' unease about its impact on physical well-being, including nutrition and potential complications.

2.2.4 Food Safety (FS)

In accordance with Rahman's (2021) findings, food safety encompasses the assurance of high-quality food, preventing contamination and potential harm to consumers. A similar perspective is shared by Manning and Soon (2013), who define food safety as the concept of ensuring that food does not pose any risks to consumers when prepared and consumed as intended. Additionally, the regulation of food safety primarily focuses on the narrower aspect of the federal food system's health regulation (Leib & Pollans, 2018). Food safety in the realm of PBM refers to the assurance that PBM products are prepared and consumed without causing harm to consumers.

2.2.5 Word-of-Mouth (WOM)

Katz and Lazarsfeld (2017) delineated word-of-mouth as the interchange of marketing intelligence among consumers which significantly influences their behavioral inclinations and perceptions towards various products. Huete-Alcocer (2017) has proposed WOM is used for communication among individuals, with the receiver perceiving the shared information on brands or products as non-commercial. Similarly, consumer communication on products, services, or companies is defined as WOM and is seen as free from commercial influence (Litvin et al., 2008). In the realm of PBM, WOM refers to the sharing of information and opinions about plant-based meat products among individuals.

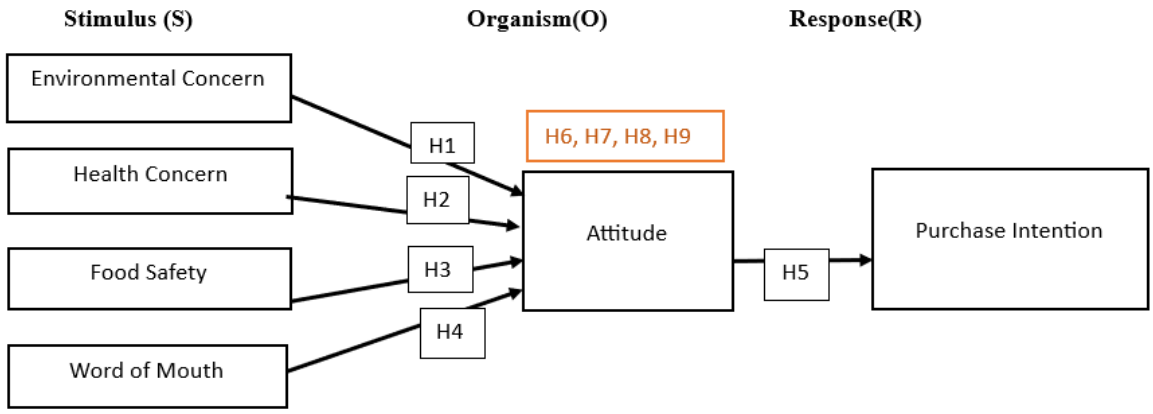
2.2.6 Attitude

An attitude is a psychological disposition that entails assessing a certain thing with differing degrees of acceptance or disapproval, according to Eagly and Chaiken (2007). Besides, it defined as the behavior is influenced by conscious or unconscious cognitive views, which are formed by accumulating experience over time (Alenezi et al., 2022). Furthermore, another interpretation of attitude is a persistent, acquired tendency, a persistent cognitive and/or neurological state that always behaves in a specific way for a specific class of objects, or reacts to a specific class of objects (Dark, 2005). In the realm of PBM, attitude refers to consumer's psychological tendency to evaluate plant-based meat with some degree of like or dislike.

2.3 Proposed Conceptual Framework

The Factors that Influence the Purchase Intention of Plant-Based Meat Among Gen Z in Malaysia

Figure 2.1 Conceptual Framework



As shown in Figure 2.1's SOR model-based structure, the study intends to investigate the link between prior characteristics and Malaysian Gen Z consumers' propensity to purchase plant-based meat. In order to determine purchase intention, it looks at word-of-mouth, attitude, food safety, health, and environmental concerns as mediators.

2.4 Hypothesis Development

2.4.1 The Relationship Between Environmental Concern and Attitude on Purchase Intention Toward Plant-Based Meat.

With a responsible attitude towards the environment, consumers are becoming more conscious of environmental concerns and assessing the environment before buying sustainable items

(Qiao et al., 2021). Moreover, Sigh and Bansal (2012) emphasized that environmental concern individuals are inclined to prefer products that reflect their values, leading to a positive perception of eco-friendly choices. Thus, Environmental concerns may impact consumer attitudes towards PBM positively.

H_1: Environmental concern will have a positive influence on the attitude towards plant-based meat.

In the SOR model, stimulus impacts organisms and responses. Organic food in relation to consumer's environmental concern is seen as an internal stimulus affecting consumer organism and response. Environmental concerns are considered stimuli (Liu & Zheng, 2019). In the link between environmental concerns and the desire to purchase environmentally friendly products, attitudes have a mediating function (Khaola et al., 2014). Consumers' purchasing intentions are shaped by their perceptions of green products, which reflects the importance of environmental awareness (Tang et al., 2014). Positive attitude towards eco-friendly items, influenced by environmental concern, leads to higher purchase intention. Since, attitude is a bridge explaining psychological processes in consumer behavior towards green products. Thus, environmental concerns impact consumer attitudes towards sustainable products like plant-based meat, which in turn affect their behavior.

H_6: Attitude towards plant-based meat will mediate the relationship between environmental concern and purchase intention of plant-based meat.

2.4.2 The Relationship Between Health Concern and Attitude on Purchase Intention Toward Plant-Based Meat.

Consumer concern about the negative impacts of meat consumption on health and the environment has increased as a result of growing health consciousness, which has led to an increase in interest in plant-based meat substitutes (Boukid, 2020). According to Sun (2008), this research demonstrates that various health concerns not only influence consumers' motivation in choosing food but also impact their attitudes toward healthy eating. It is reasonable to think that consumers who give priority to health may prefer plant-based meat

because people think that it is healthier than other foods, being both rich in protein and fiber, thereby increasing their overall life quality and well-being. Consequently, it is anticipated that consumers, due to their health concerns, would exhibit a positive inclination toward plant-based meat consumption.

H_2: Health concern will have a positive influence on the attitude towards plant-based meat.

Moreover, Seo et al. (2023) disclosed that the primary reason for the consumption of PBMA was the attainment of health benefits, while many studies have demonstrated that the plant-based meat consumption is driven by health concerns (He et al., 2020; Angwyn et al., 2022; Thanabordeekij & Kitiya, 2023), ultimately influencing consumers' intention to buy PBM (Jang & Cho, 2022). The significance of consumers' health concerns cannot be understated, as previous research has indicated that it serves as a motivating factor within their environment to a certain degree (Talwar et al., 2021). Additionally, Chen's (2022) findings establish a noteworthy positive relationship between attitude and intention. Therefore, we expect that attitude plays an intermediary role between health concerns (stimuli) and plant meat purchase willingness (response), because attitude is the internal guiding factor in shaping the individual decision-making process (Talwar et al., 2021). So, we have formulated this hypothesis.

H_7: Attitude towards plant-based meat will mediate the relationship between health concern and purchase intention of plant-based meat.

2.4.3 The Relationship Between Food Safety and Attitude on Purchase Intention Toward Plant-Based Meat.

Most plant-based meat products consist of uncomplicated and approved ingredients for human consumption (Rubio et al., 2020). Furthermore, the stringent monitoring of food production processes for plant-based meats instills a sense of trust among consumers. The consideration of food safety is a crucial element in shaping individuals' attitudes (Michaelidou & Hassan, 2008). From a logical standpoint, concerns regarding food safety influence attitudes due to the perception that plant-based options are inherently safe. Thus, it is anticipated that individuals who giving priority to safety of food may hold a positive attitude.

H_3: Food safety will have a positive influence on the attitude towards plant-based meat.

The finding of Michaelidou & Hassan (2008) highlights the concern of food safety as the primary predictor of individuals' willingness to consume organic food, indicates that food safety concerns serve as a stimulus within consumers' environment to a certain extent (Talwar et al., 2021). Concurrently, the research shows that consumers' attitude will significantly affect their behavior intention towards plant-based meat (Chen, 2022). It is speculated that mediation occurs when an independent variable (IV) produces an intermediary that subsequently influences the dependent variable (DV) (MacKinnon et al., 1995). Studies indicate that perceptions of organic food are predictive of intentions to buy, and that the main factors influencing these perceptions are concerns about food safety. It may be inferred that attitudes operate as a mediating element between the stimulus of food safety and the subsequent inclination to purchase plant-based meat. Finally, these hypotheses were formed.

H_8: Attitude towards plant-based meat will mediate the relationship between food safety and purchase intention of plant-based meat.

2.4.4 The Relationship Between Word-of-Mouth (WOM) and Attitude on Purchase Intention Toward Plant-Based Meat.

WOM is commonly recognized as a highly influential factor that impacts consumer behavior (Daugherty & Hoffman, 2013). Drawing on Fishbein's model (1963), if the audience gets positive information about the product through traditional WOM communication, they will have a better attitude towards the same product. In fact, research has indicated that positive WOM enhances consumer attitudes (Park & Lee, 2009). Martin and Lueg (2013) assert that the utilization of information conveyed through positive WOM messages by the receiver contributes to a favorable attitude towards the recommended product. According to these authors, exposure to WOM communication significantly influences one's attitude towards the product. Given the confirmation of WOM's impact on attitudes towards products, we aim to validate this result in the realm t of plant-based meat. Consequently, the following hypothesis has been formulated.

H_4: Word-of-mouth will have a positive influence on the attitude towards plant-based meat.

According to Cheng et al. (2021), a stimulus can manifest in various forms, such as WOM communications. Additionally, previous studies have demonstrated that WOM has effects on product involvement (Hanna & Wozniak, 2000), attitudes towards the product (Giese et al., 1996), and purchase intention (Hamouda & Tabbane, 2013). Moreover, the consumer's favorable attitude towards purchasing meat substitute products greatly affects their willingness to consume such products. (Knaapila et al., 2022; Chen, 2022; Ruby, 2012). To further understand the relationship between the propensity to buy plant-based meat in response to word-of-mouth cues, it is imperative that we look at attitude as a mediator and mechanism. Thus, we hypothesize that below hypotheses.

H_9: Attitude towards plant-based meat will mediate the relationship between WOM and purchase intention of plant-based meat.

2.4.5 The Relationship Between Attitude and Purchase Intention Toward Plant-Based Meat.

Chen (2007) postulated that a favorable disposition towards a particular product serves as a prominent predictor, capable of instigating consumers' intention to purchase. Many studies have determined the positive correlation between the purchase inclination and attitude of numerous products and services. Within the realm of social media, a journal substantiated that harbouring a favourable outlook toward products endorsed by social media influencers enhances the likelihood of purchase (Lim et al., 2017). Similarly, in the domain of fashion, it has been observed that the attitude towards purchasing fashion accessories influences purchase intention. Moreover, Bian (2010) discovered that consumers' attitude toward luxury brands exerts a positive influence on their intention to purchase. Furthermore, Taylor's study (2000) affirms that consumers' attitudes towards retailers positively impact retail shopping. Concurrently, in the realm of PBM, research conducted by Chen (2022) in Taiwan reveals a positive and important association between attitude and desire. Given the aforementioned evidence confirming the effect of attitude on purchase willingness towards a product, we seek to validate this finding within the case of Generation Z consumers in Malaysia. Hence, this hypothesis was formulated.

H_5: Attitude has a significant positive influence on consumer's purchase intention towards plant-based meat.

2.5 Conclusion

This section analyzes factors affecting Gen Z's attraction towards buying PBM. A model connects various factors to buying intention through a mediator variable. Environmental worries may impact purchasing intention through attitudes towards eco-friendly products.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter includes the sampling methodology, data gathering methods, research design, and suggested data analysis tools.

3.1 Research Design

Based on Hunziker & Blankenagel (2021), research design known as collection of choices that direct the investigation in order to produce a certain argument. It serves as a tool to achieve desired outcomes (Indu & Vidhukumar, 2020). Research design aims to convert concepts into systematic investigations, addressing the core of a research question (Gatrell et al., 2011). Our study used quantitative research methods to determine the main independent variables impacting Malaysian Gen Z consumers' desire to purchase plant-based meat.

3.1.1 Quantitative Research

To provide results that are generally applicable, quantitative design uses organised techniques such as surveys and big samples (Price & Lovell, 2018; Bronson, 2015). Large-scale samples are utilized in quantitative research with structured instruments like questionnaires or surveys. After formulating a hypothesis, researchers gather data to analyze if results align with the hypothesis, aiding in evaluating factors influencing plant-based meat purchase intention. Using

this technique, Debora Indriani et al. (2019) investigated the variables impacting Indonesian consumers' propensity to buy environmentally friendly goods.

3.1.2 Descriptive Research

According to Bulbulia et al. (2019), descriptive research is concerned with describing and recording characteristics, behaviours, or events without establishing causality or verifying theories. It focuses on providing an accurate account of the subject under study. This approach is well-suited for analyzing consumer behavior. Price & Lovell (2018) support the use of descriptive design in research to quantify consumer behavior without external manipulation. Descriptive research provides insights into consumer preferences, attitudes, and buying habits. The study focuses on Malaysian Gen Z customers influenced by factors affecting their interest in plant-based meat.

3.2 Sampling Design

Turner (2020) states that sampling design entails choosing a pertinent subset of the population for a particular study issue. Furthermore, sampling aids in creating comprehensive assessments by identifying metrics within a relevant subset of a population (Zikmund et al., 2010). The analysis of the study includes target respondents, sampling strategies, sampling frame identification, and sample size computation.

3.2.1 Target Population

The target group is made up of individual who have specific characteristics (Malhotra & Peterson, 2006). The study focuses on Generation Z consumers in Malaysia, born from 1995

to 2012. However, respondents targeted are born between 1995 and 2005, aged 18-28. Chan (2001) suggests studying green topics in individuals aged 18 and over, as minors may not be aware of plant-based meat. Besides, individuals under 18 usually have limited income from allowances, part-time jobs, or parental support, leading to lower buying power. According to Adnan et al. (2017), Generation Z is well-educated, concerned about the environment, and prefers environmentally friendly goods. Moreover, Generation Z places a high priority on food's nutritional content and health (Pocol et al., 2021). The research group was chosen because participants may provide detailed information on how they intend to buy plant-based meat.

3.2.3 Sampling Location

Our sampling locations are Selangor, Kuala Lumpur, Johor, Penang, and Perak are crucial for Malaysia's food and beverage industry. Data in figure 3.1 from DOSM in 2021 shows a gross output value of RM78.5 billion, with these states contributing over 70% to the national output. Survey targets Generation Z individuals affiliated with these states through education, occupation, or nativity.

Figure 3.1 Principal Statistics of Food and Beverages Services by State, 2021

Jadual 2: Statistik Utama Perkhidmatan Makanan dan Minuman mengikut Negeri, 2021
Table 2: Principal Statistics of Food and Beverages Services by State, 2021

Negeri *State*	Nilai output kasar *Value of gross output*	Nilai input perantaraan *Value of intermediate input*	Nilai ditambah *Value added*	Jumlah pekerja *Total number of persons engaged*	Gaji & upah yang dibayar *Salaries & wages paid*	Nilai harta tetap *Value of fixed assets*
	(RM'000)	(RM'000)	(RM'000)		(RM'000)	(RM'000)
Jumlah *Total*	**78,484,137**	**44,219,442**	**34,264,695**	**968,717**	**14,718,658**	**9,770,317**
Johor	7,450,426	4,117,743	3,332,682	91,338	1,590,882	790,323
Kedah	2,724,546	1,593,089	1,131,457	49,355	477,933	209,676
Kelantan	2,242,849	1,213,756	1,029,093	38,286	271,053	160,003
Melaka	2,359,247	1,117,989	1,241,258	33,306	318,467	328,985
Negeri Sembilan	2,171,675	1,183,690	987,984	38,778	409,249	181,247
Pahang	2,652,067	1,514,705	1,137,362	44,158	443,644	602,721
Pulau Pinang	6,946,364	3,810,277	3,136,088	58,928	877,324	600,158
Perak	4,445,467	2,637,622	1,807,844	65,342	731,277	501,849
Perlis	444,407	265,885	178,522	8,282	81,950	32,425
Selangor	20,964,570	11,596,621	9,367,948	245,455	4,884,510	3,068,701
Terenganu	1,854,644	1,046,858	807,786	33,236	273,001	100,658
Sabah	3,287,255	1,870,556	1,416,699	50,098	632,092	543,349
Sarawak	3,591,752	1,966,719	1,625,033	54,356	677,875	346,301
W.P. Kuala Lumpur	16,809,033	9,961,118	6,847,915	151,891	2,945,141	2,212,689
W.P. Labuan	176,923	122,002	54,921	3,176	44,876	53,698
W.P. Putrajaya	362,914	200,812	162,102	2,732	59,383	37,535

3.2.3 Sampling Techniques

Randomization is not used in non-probability sampling for participant selection. It is cost-effective and time-efficient, making it suitable for research with limited resources. Total population may not be available for study, which makes non-probability sampling more feasible (Pace, 2021). The study will utilize judgemental sampling, a method where researchers select a sample of people based on specific criteria and evaluate if they align with the assumed unique attributes (Rahi, 2017).

Participants were selected according to specific criteria related to plant-based meat awareness and age range. To hit the 384-respondent objective, we will send QR codes or survey URLs via social media.

3.2.4 Sample Size

The total number of participants or observations in research is the sample size (Lakens, 2022). Based on the latest data from Tjiptono et al. (2020), Generation Z constitutes 29% of Malaysia's population. DOSM lacks specific data on the 18-28 age group's proportion. Tjiptono et al.'s (2020) study provides the most information on this demographic. Worldmeter reported Malaysia's 2022 population as 33,938,221. About 29% of this total is around 9.85 million. We employed Morgan's Sample Size Table to calculate the required number of respondents. The optimal sample size for 9.541 million counts is 384 according to Figure 3.2.

Figure 3.2: Morgan's Sample Size Table

Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.
S is sample size.

Source: Krejcie & Morgan, 1970

3.3 Data Collection Methods

3.3.1 Primary Data

Researchers use techniques like surveys, interviews, observations, or experiments to get primary data, also referred to as first time data, directly from sources (Hox & Boeije, 2005). To gather primary data, we used a Google Form survey. Questionnaires were distributed to the target audience to collect data. We'll send out online surveys using email, social media, and QR codes. 384 respondents will be given questionnaires to collect primary data.

3.3.2 Questionnaire Design

The survey results rely heavily on the questionnaire accurately capturing the conversation. To reduce inaccuracies, questionnaires should follow established guidelines and protocols (Krosnick, 2017).

Four sections will make up the questionnaire. Questions about demographics are in Section A, while Section B has 26 questions regarding the factors affecting Malaysian Gen Z's tendency to purchase PBM. Section C focuses on intermediate variables like attitude. Lastly, Section D consists of questions related to the dependent variable, purchase intention. In Sections B, C, and D, a five-point Likert scale—which goes from strongly disagree to strongly agree—is employed.

3.3.3 Pre-Test

According to Reynolds et al. (1993), a pre-test is the first stage in evaluating a questionnaire's efficacy. To fix any potential errors, a preliminary analysis was done on the poll before it was sent to a wider audience. Three behavioural psychology specialists from academia extensively examined the questionnaire. To identify any errors or shortcomings, feedback was sought from three academics.

3.3.4 Pilot Test

In order to find and fix any problems with a questionnaire before it is distributed, a pilot study—which Whitehead et al. (2015) advises should include a minimum of thirty participants—is carried out following a pretest. The current pilot study involved 30 eligible respondents. Figure 3.3 showed the pilot test results.

3.4 Proposed Data Analysis Tools

3.4.1 Descriptive Analysis

Descriptive analysis utilises dispersion measurements like range, variance, and standard deviation in addition to core patterns like mean, median, and mode to provide context for raw data (Bajpai et al., 1992). The effectiveness is highlighted for extensive or complex datasets, revealing distributions, fluctuations, and correlations (Bajpai et al., 1992). The research aims to understand a phenomenon rather than confirm hypotheses or make conclusions. Therefore, descriptive analysis is more appropriate for this study.

3.4.2 Partial Least Squares Structural Equation Modelling (PLS-SEM)

The study's data analysis makes use of PLS-SEM, a statistical technique used in business research to evaluate significance in intricate models or small samples and analyse correlations between variables in structural equation models (Sarstedt et al., 2022). To evaluate measurement and structural models, latent class analysis is frequently used with PLS-SEM, which is prized in commercial research for its adaptability with odd data.

3.4.2.1 Measurement Model Assessment

PLS-SEM's measurement model examines how the underlying structure and observable indicators relate to one another. Hair et al. (2011) assesses the internal consistency reliability through the utilization of outer loading (OL) and composite reliability (CR), examines convergent validity by employing the average variance extracted (AVE), and scrutinizes discriminant validity by utilizing the heterotrait-monotrait ratio of correlations (HTMT).

The coherence between indicators and the underlying construct is indicated by a CR of 0.7 or higher, according to Hair et al. (2020). Hair et al. (2021) suggest OL should be above 0.708 for item reliability. Indicators below 0.4 should be removed, while those between 0.4 and 0.7 can be kept if they meet AVE and CR standards according to Ramayah et al. (2018) criteria.

Based on Hair et al. (2019), convergent validity assesses the positive association between different measurements of a construct. By analysing the measure's indicators, the Average Variance Extracted (AVE) shows this. Strong convergent validity is demonstrated by an AVE surpassing 0.50, according to Hair et al. (2011). This suggests that the variable is responsible for more than fifty percent of the variance in its measurement.

In a measurement model, Hair et al. (2020) explains that HTMT assesses discriminant validity by using criteria values from -1 to 1. Higher HTMT scores show less discriminant validity according to Janadari et al. (2016).

3.4.2.2 Structural Model Assessment

Hair et al. (2011) pointed out that in PLS-SEM, structural models are critical to understanding relationships and causality. The model uses VIF, path coefficients, indirect effects, R^2, F^2, and PLS-Predict to evaluate collinearity and fit. VIF value close to 3 or lower suggests minimal collinearity, and above 5 suggests increased collinearity issues (Hair et al., 2019). Given criteria such as R^2 values (0.75, 0.50, 0.25), t-values (> 1.96), and p-values (< 0.01), path coefficients in the structural model estimate recommended correlations across variables (Purwanto, 2021; Hair et al., 2021). The path coefficient's standard deviation shows estimate variation between samples, calculated using bootstrap method. Lower standard deviation indicates more reliable estimates, while higher standard deviation suggests greater uncertainty (Hair et al., 2021).

Specific indirect effects demonstrate how independent variables impact dependent variables through mediating variables, elucidating the influencing mechanism. A P-value, typically below 0.05, is employed to establish significance in studies (Dunkler et al., 2019).

R^2 evaluates an independent variable's variance explanation in a regression (Hair et al., 2019); a value of 0.75 indicates significance, 0.50 indicates appropriateness, and 0.25 indicates insufficiency (Purwanto, 2021). F measures how exogenous factors affect endogenous ones; effect sizes are categorised as tiny (0.02), medium (0.15), or large (0.35) (Janadari et al., 2016).

PLS-Predict evaluates the predictive performance of the model using statistics such as MAE, RMSE, and R^2. Comparisons with LM benchmarks help determine the predictive power of the model. Consistent forecasts suggest high prediction accuracy, while fluctuating forecasts suggest moderate accuracy (Hair et al., 2019).

3.5 Conclusion

To improve comprehension of data collecting, this chapter describes sampling, data collection, and analysis techniques. Data analysis challenges are covered in the upcoming chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The obtained data, including measurement evaluations, structural modelling analysis, and demographic breakdowns, are examined and clarified in this chapter using SmartPLS 4.

4.1 Descriptive Analysis

Out of 420 questionnaires issued, 35 sets were invalid due to factors like sample location, target age, and answering style. The study focuses on Generation Z, aged 18-28, from Selangor, Kuala Lumpur, Johor, Penang and Perak. Only 385 sets of responses met the study's requirements.

Participants are made up of 28.8% male (N=111) and 71.2% female (N=274) according to Table 4.1. 72.2% (N = 278) of them are in the 18–24 age range, while 27.8% (N = 107) are in the 25–30 age range.Out of the 385 valid participants, the largest proportion, accounting for 24.7% (N=95), hails from Selangor. Following this, 22.6% of respondents (N=87) are from Kuala Lumpur, 17.9% are from Penang (N=65), 17.7% are from Perak (N=68), and 17.7% are from Johor (N=66).

Moreover, in terms of educational level, 62.9% of participants (N=242) were enrolled in undergraduate programs, while 17.4% (N=67) had a secondary school education. Conversely, 15.3% of respondents at diploma level (N=59), 3.6% had a postgraduate education background (N=14), and 0.5% had only completed primary school (N=2); finally, 0.3% reported having no formal education (N=1). Following this, 69.9% of participants (N=268) were unemployed, with the remaining 30.4% being employed (N=117).

In addition, Table 4.1 below shows that 47% (N=181) of respondents said they made less than RM500, while 23.6% (N=91) fell within the RM501–RM1500 income bracket. Additionally, 11.7% of respondents (N=45) indicated an income range of RM1501– RM2500. Moreover, 10.1% of participants reported an income level between RM2501 and RM3500 (N=39). Furthermore, 5.7% of respondents had an income between RM3501 and RM4500 (N=22). Lastly, 1.8% of participants reported an income of RM4500 and above (N=7).

Table 4.1

Table summarizing demographics

Variable		Frequency	Percentage
Gender	Male	111	28.80%
	Female	274	71.20%
Age	18-24	278	72.20%
	25-30	107	27.80%
Location	Johor	66	17.10%
	Kuala Lumpur	87	22.60%
	Penang	69	17.90%
	Perak	68	17.70%
	Selangor	95	24.70%
Education Level	Diploma	59	15.30%

	No Formal Education	1	0.30%
	Primary School	2	0.50%
	Postgraduate	14	3.60%
	Secondary School	67	17.40%
	Undergraduate	242	62.90%
Employment Status	Employed	117	30.40%
	Unemployed	268	69.60%
Income Level	RM500 Below	181	47%
	RM501- RM1500	91	23.60%
	RM1501-RM2500	45	11.70%
	RM2501-RM3500	39	10.10%
	RM3501-RM4500	22	5.70%
	RM4500 Above	7	1.80%

4.2 PLS-SEM

4.2.1 Measurement Model

The measuring model is evaluated with respect to internal consistency using CR and OL, convergent validity using AVE, and discriminant validity using HTMT.

4.2.1.1 Composite Reliability (CR)

The variables display CR values between 0.869 and 0.966, as shown in Table 4.2. Both variables exhibit internal consistency reliability, with values exceeding 0.70.

4.2.1.2 Outer Loadings (OL)

Table 4.2 displays the outer loadings (OL) of variables, most had OLs over 0.7 indicating strong reliability, except for EC2 and FS2 with OLs between 0.6 and 0.689. Results fell below the recommended 0.7 criterion but were within the acceptable range of 0.4 to 0.7. Despite loadings below the permitted value, environmental concern and food safety items were retained due to high composite reliability and AVE values. This suggests good dependability of each item, supporting the stated variables (Ramayah et al., 2018).

4.2.1.3 Average Variance Extracted (AVE)

The AVE values range from 0.527 to 0.825 in Table 4.2. The AVE values all exceed 0.5, indicating strong convergent validity. The variables match well with their indicators, capturing the variance effectively.

Table 4.2

Results of variable reliability, indicator reliability, and alignment between variables

Variables	Items	Composite Reliability (CR)	Average Variance Extracted (AVE)	Outer Loadings (OL)
Attitude	AT1	0.966	0.8	0.902
	AT2			0.893
	AT3			0.888
	AT4			0.905
	AT5			0.893
	AT6			0.887
	AT7			0.894
Environmental Concern	EC1			0.826
	EC2			***0.689***
	EC3			0.799

	EC4	0.9	0.602	0.783
	EC5			0.777
	EC6			0.773
Food Safety	FS1	0.869	0.527	0.748
	FS2			***0.6***
	FS3			0.782
	FS4			0.701
	FS5			0.77
	FS6			0.739
Health Concern	HC1	0.92	0.589	0.795
	HC2			0.784
	HC3			0.767
	HC4			0.751
	HC5			0.741
	HC6			0.76
	HC7			0.797

	HC8			0.746
Purchase Intention	PI1	0.953	0.772	0.897
	PI2			0.912
	PI3			0.886
	PI4			0.839
	PI5			0.867
	PI6			0.868
Word-of-Mouth	WOM1	0.966	0.825	0.899
	WOM2			0.931
	WOM3			0.922
	WOM4			0.895
	WOM5			0.908
	WOM6			0.895

4.2.1.4 Heterotrait-Monotrait Ratio of Correlations (HTMT)

The data in table 4.3 indicates the HTMT results of both models meet the criteria of being between -1 to 1. Most HTMT values are below 0.9, indicating significant differences among all factors examined in the research (Hair et al., 2021).

Table 4.3

Result of Variable Distinctiveness

	Attitude	**Environmental Concern**	**Food Safety**	**Health Concern**	**Purchase Intention**	**Word-of-Mouth**
Attitude						
Environmental Concern	0.708					
Food Safety	0.623	0.664				
Health Concern	0.662	0.811	0.63			
Purchase Intention	0.877	0.669	0.662	0.589		
Word-of-Mouth	0.787	0.609	0.68	0.564	0.845	

4.2.2 Structural Model

Path coefficients, VIF, particular indirect effects, R^2, F^2, and PLS Predict assessment are used to evaluate the structural model.

4.2.2.1 Path Coefficient & Collinearity Statistics (VIF)

Path coefficients, VIF values, T-statistics, and P-values are displayed in Table 4.4. Multicollinearity is absent from VIF values less than 3 (Hair et al., 2021). For two-tailed testing, t-values more than 1.96 and P-values less than 0.01 are necessary. These conditions are met by all hypotheses except H3. Only the hypotheses H1, H2, H4, and H5 in the PLS-SEM analysis have empirical support.

Table 4.4

Result of Path Analysis & Collinearity Statistics (VIF)

	Path	VIF	Standard Deviation	T-Statistics	P-Value	Results
H1	EC > AT	2.450	0.070	3.300	0.001	Support
H2	HC > AT	2.226	0.055	2.879	0.004	Support
H3	FS > AT	2.053	0.062	***0.624***	***0.533***	Not Support
H4	WOM > AT	1.935	0.041	12.382	0.000	Support
H5	AT > PI	2.958	0.052	9.484	0.000	Support

4.2.2.2 Specific Indirect effect

P-value below 0.05 is commonly employed to establish "statistical significance" (Dunkler et al., 2019). Given that their p-values are less than 0.05, H6, H7, and H9 are considered significant. Contrarily, due to the p-value associated with hypothesis H8 surpassing the threshold of 0.05, it is determined to lack statistical significance.

Table 4.5

Result of specific indirect effect

		P-value	**Results**
H6	EC > AT > PI	0.001	Significant
H7	HC > AT > PI	0.006	Significant
H8	FS > AT > PI	***0.535***	Not Significant
H9	WOM > AT > PI	0.000	Significant

4.2.2.3 R-square

The R^2 coefficient provides a quantitative measure of the degree to which an independent variable is able to elucidate the variability observed in a dependent variable. Following the table below, the R^2 value of AT is 0.662 and PI is 0.771. It indicates that 66.2% of the findings are significant to analyze the regression line. Consequently, among Malaysian Gen Z consumers, all IVs had a 66.2% influence on their desire to purchase PBM.

Table 4.6

Result of R^2

	R^2	**Result**

Attitude	0.662	Appropriate to Significant
Purchase Intention	0.771	Significant

4.2.2.4 F-square

F^2 determines each predictive variable's effectiveness in explaining endogenous variables (Cohen, 2013). H3(0.002), H6(0.014), H7(0.005), and H8 (0.009) are smaller than 0.02 which manifests as no effect size. Large effects are indicated by effect sizes larger than 0.35, as seen by H4 (0.399) and H5 (0.358). H9 (0.213) moreover shows an impact size greater than 0.15, suggesting a medium effect. Ultimately, effect sizes greater than 0.02, which denotes minor effects, are displayed by H1 (0.064) and H2 (0.033).

Table 4.7

Result of F^2

		AT	**Effect Size**	**PI**	**Effect Size**
H1 & H6	EC	0.064	Small	0.014	No effect
H2 & H7	HC	0.033	Small	0.005	No effect
H3 & H8	FS	0.002	No effect	0.009	No effect
H4 & H9	WOM	0.399	Large	0.213	Medium
H5	AT	-	-	0.358	Large

4.2.2.5 Assessment of PLS Predict

If the values are all positive or all are negative which means the prediction of the items to DV is at high predictive level: And if all the values are positive combine with negative values which means it is a moderate predictive level. Based on the table below, the values are positive combine with negative values which means it is a moderate predictive level.

Table 4.8

Result of PLS Predict

	PLS-RMSE	LM-RMSE	Results
AT1	0.935	0.958	0.023
AT2	1.001	1.048	-0.047
AT3	1.045	1.106	-0.061
AT4	0.974	1.006	-0.032
AT5	0.990	1.014	-0.024
AT6	1.040	1.089	-0.049
AT7	1.019	1.052	-0.033
PI1	1.028	1.063	-0.035
PI2	1.019	1.071	-0.052
PI3	0.981	1.053	-0.072
PI4	1.286	1.263	0.023
PI5	1.099	1.127	-0.028
PI6	1.135	1.158	-0.023

Predictive level: Moderate Predictive Level

4.3 Conclusion

The chapter concluded with data analysis and interpretation. The study produced and analysed data collecting findings in tabular format using SmartPLS software.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

This section emphasizes the notable findings while also acknowledging the constraints of the research, alongside deliberating on its theoretical and managerial consequences, and suggesting avenues for future investigation.

5.1 Discussion of Major Findings

5.1.1 Demographic

Important insights into the respondents were uncovered by Chapter 4's results. It's evident that women are more inclined to purchase PBM because they comprise the majority. Male accounted for 28.8% of the respondents, while female was the majority at 71.2%. It might be due to men and women have different environmental and ethical concerns. Otterbring's (2023) research indicates that women prioritise sustainability and eco-friendly items, such as plant-based products, due to their competitiveness for resources and social prestige. But males are less likely to consume green products because they are more concerned with competing with other guys for social and financial advantages.

The study focuses on Malaysia's Generation Z, aged 18 to 28. Most respondents, aged 18 to 24, are students with varying levels of education including degree, secondary, diploma, and postgraduate. This is corroborated by study by Nasir and Karakaya (2014), which discovered that customers with greater education levels were more interested in

plant-based foods. Higher educated individuals frequently have easier access to a wider range of information sources, including academic journals, research papers, teaching aids, and online resources. As a result, individuals could be more knowledgeable about and receptive to plant-based meats.

Ultimately, only five states in Malaysia were surveyed, with most respondents from Selangor, followed by Kuala Lumpur, Penang, Perak, and Johor. Johor has the smallest population among the five states. States with larger populations may exhibit more interest in plant-based meats. Urban areas often lead in trends, with the youth being more open to trying new food options like plant-based meats. Penang had slightly more participants in the study compared to Perak despite having a smaller population.

5.1.2 Environmental Concern Will Have a Positive Influence on the Attitude Towards Plant-Based Meat

The finding revealed that environmental concerns influence the perception of plant-based meat among Malaysia's Generation Z. In essence, environmentally conscious Malaysian Gen Z individuals are more receptive to plant-based meat. Generation Z is increasingly eco-friendly due to their heightened environmental awareness and extensive social media usage (Burger & Rader, 2023). They recognize that consuming plant-based meat aligns with their sustainability consciousness, leading to reduced greenhouse gas emissions, water usage, and land utilization. The study supports by Chen's (2022) research indicating that environmental concerns impact the acceptance of PBM among young consumers, confirming the link between environmental worry and favorable attitudes towards plant-based meat.

5.1.3 Health Concern Will Have a Positive Influence on The Attitude Towards Plant-Based Meat

The findings show that concerns about health impact Gen Z's perception of plant-based meat in Malaysia. Generation Z values health advantages and prefers plant-based meat for its health benefits. Generation Z is more conscious of their eating patterns and overall health since the start of the Covid-19 pandemic, according to Suryadi et al. (2022). This is aligned with research by Xie et al. (2020) found that Gen Z has a positive and favorable attitude towards organic food and is evolving towards a health-conscious mindset.

5.1.4 Food Safety Will Have a Positive Influence on The Attitude Towards Plant-Based Meat

The research findings indicated the lack of a statistically significant positive impact of food safety on the attitude of plant-based meat among the Generation Z cohort in Malaysia, suggesting the presence of health-related concerns associated with such food products. Chen (2023) conducted a study showing that customers are more worried about food safety due to rising concerns in certain regions. The findings aligned with Boukid's (2024) research, indicating a rapidly expanding demand for plant-based meat, raising questions over its safety. These concerns include possible allergies linked to protein sources and processing pollutants that might be hazardous to consumers' health.

5.1.5 Word-Of-Mouth Will Have a Positive Influence on The Attitude Towards Plant-Based Meat

As per results, Gen Z individuals exhibit favorable views on plant-based meat with positive attitude. Word-of-mouth is a trustworthy source for new ideas and items, leading to this positive attitude. Customers tend to trust real experiences and opinions of real people. Customers tend to have a positive view of plant-based meat substitutes when they hear positive reviews from others. Knowledge about plant-based meat is disseminated through word-of-mouth, enhancing customer confidence, product awareness, and acceptability. The discovery aligns with Carfora et al.'s (2022) results, indicating that positive word-of-mouth enhances positive attitudes and perceived social norms, increasing willingness to pay for PBM, especially when it corresponds with environmental and health issues.

5.1.6 Attitude Will Have a Positive Influence on Consumer's Purchase Intention Towards Plant-Based Meat

Our study demonstrates that the attitude is poised to positively influence the purchase intention of Gen Z individuals in Malaysia toward plant-based meat. Survey participants expressed strong agreement regarding their significantly favorable attitude towards plant-based meat. Within our study, attitudes are intertwined with individuals' environmental and health-related concerns, as well as information spread through word of mouth. These variables are anticipated to cultivate a positive attitude among Gen Z individuals in Malaysia towards plant-based meat, consequently fostering their inclination to make a purchase. The findings of the investigation align with our initial hypothesis, except for the aspect concerning food safety. Simultaneously, the objective of our study to verify this conclusion within the context of Generation Z consumers in Malaysia has been successfully accomplished.

5.1.7 Attitude Towards Plant-Based Meat Will Mediate the Relationship Between Environmental Concern and Purchase Intention of Plant-Based Meat

According to our research, the desire to buy plant-based meat and environmental concern are mediated by one's attitude towards such meat. The reason is the perceived benefits of individuals. Respondents believe it benefits the environment and strengthens their positive attitude. An individual's perception of PBM as a way to lessen the environmental effect of traditional meat production may differ depending on the findings of Moyano-Fernández's research (2022). Hence, plant-based meat is seen as good for the environment and encourages a positive attitude and action among Gen Z in Malaysia to buy it.

5.1.8 Attitude Towards Plant-Based Meat Will Mediate the Relationship Between Health Concern and Purchase Intention of Plant-Based Meat

The results of our study suggest that attitudes are important mediators in the relationship between health concerns and Gen Z consumers' inclination to purchase PBM in Malaysia. Most respondents in our survey concurred that opting for plant-based meat could bring them benefits, leading them to prefer these advantageous products over others. The rationale behind the intermediary role of attitude lies in cognitive beliefs. As plant-based meat has fewer saturated fats and cholesterol than meat, health-conscious Gen Z people in Malaysia would view it as a more nutritious option (Costa-Catala et al., 2023). These beliefs play a part in fostering a positive attitude towards plant-based meat and subsequently influencing purchase intentions.

5.1.9 Attitude Towards Plant-Based Meat Will Mediate the Relationship Between Food Safety and Purchase Intention of Plant-Based Meat

Our research outcomes indicate that there is insufficient empirical evidence to substantiate the claim that attitudes towards food safety impact the buying intentions of Generation Z Malaysians towards PBM. The dismissal of the hypothesis can be linked to the preference of Generation Z consumers in Malaysia for traditional meat as opposed to plant-based alternatives. These consumers prioritize taste and texture over food safety when making consumption choices. As a result, their attitudes towards plant-based meat products may be neutral or unfavorable, leading to reduced purchase intentions despite concerns about food safety.

5.1.10 Attitude Towards Plant-Based Meat Will Mediate the Relationship Between Word-of-Mouth and Purchase Intention of Plant-Based Meat

In our study, we investigated the function of attitude as a mediator in the link between plant-based meat purchasing intention and word-of-mouth. The justification for this hypothesis lies in the realm of information processing. Word of mouth (WOM) functions as a valuable information source regarding PBM offerings. When individuals are exposed to favourable recommendations or endorsements from their social circles regarding the advantages or quality of plant-based meat, they tend to engage in cognitive processing and subsequently develop attitudes aligned with this information, a phenomenon in line with Fishbein's model (1963). Hence, positive word of mouth can

shape a favourable attitude toward plant-based meat and encourage purchase intention.

5.2 Summary of Statistical Analysis

Hypothesis testing results (H1-H9) are analysed and summarised in Table 5.2.

Table 5.2

Hypothesis testing results

H1	Environmental Concern will have a positive influence on the attitude towards plant-based meat.	Supported
H2	Health concern will have a positive influence on the attitude towards plant-based meat.	Supported
H3	Food safety will have a positive influence on the attitude towards plant-based meat.	Not Supported
H4	Word-of-mouth will have a positive influence on the attitude towards plant-based meat.	Supported
H5	Attitude will have a positive influence on consumer's purchase intention towards plant-based meat.	Supported
H6	Attitude towards plant-based meat will mediate the relationship between	Supported

	environmental concern and purchase intention of plant-based meat.	
H7	Attitude towards plant-based meat will mediate the relationship between health concern and purchase intention of plant-based meat.	Supported
H8	Attitude towards plant-based meat will mediate the relationship between food safety and purchase intention of plant-based meat.	Not Supported
H9	Attitude towards plant-based meat will mediate the relationship between word of mouth and purchase intention of plant-based meat.	Supported

5.3 Implication of The Study

5.3.1 Theoretical Implication

By utilising the SOR model to investigate the purchase intentions of Malaysian Generation Z with respect to plant-based meat, we fill a research void and contribute significantly to the area of sustainable consumer behaviour research. By elucidating

emotional reactions, the theoretical foundation of the SOR model is extended to examine how various environmental cues affect consumer behaviour.

In addition, this study deviates from the Theory of Planned Behaviour (TPB) by using the SOR model to investigate and evaluate customers' intentions to buy PBM replacements. Researchers investigate how emotive and cognitive elements interact during the decision-making process of customers, with attitude acting as a mediating element. Neglecting psychological mechanisms may hinder identifying direct causal links in studies lacking attitude as a mediator. As a mediator, attitude links influencing factors clearly, revealing indirect effects among variables. In other words, researchers can comprehend complex interactions and their effects on purchase intentions by using attitudes as a mediator. This method provides a new perspective on consumer decision-making processes and links two aspects.

5.3.2 Practical Implication

Insufficient study on plant-based meat purchasing in Malaysia causes a gap in literature. The research intends to address this gap and emphasize understanding buying intent to boost purchase rates. Findings may assist policymakers in formulating favorable policies for the plant-based meat industry, promoting economic development and sustainability. Factors influencing Gen Z's buying intent can aid businesses in tailoring marketing tactics for this demographic.

Educating consumers on the advantages of PBM alternatives is a key responsibility for policymakers, including entities like the Malaysian Ministry of Agriculture and Food Safety (MAFS). For instance, in order to promote moral and ecological decision-making, MAFS may hold open lectures that highlight the advantages of PBM for the environment, animal welfare and human health. Policy makers are crucial in creating and enforcing food safety regulations for plant-based meat. They can set approved ingredient specifications and limit additives to ensure safety. Their actions can boost

consumer trust and encourage plant-based meat consumption by addressing safety concerns.

Practitioners in the plant-based meat industry can attract new food companies by understanding Gen Z's purchasing intentions in Malaysia. This can create market opportunities. Findings assist practitioners in grasping Gen Z's preferences and perceptions of plant-based meat, allowing for market expansion beyond vegetarians. To appeal to the preferences of Generation Z, practitioners may make ads that highlight the advantages of plant-based meat. Additionally, setting an appealing price for low- and medium-income individuals is important. Emphasizing product enhancement by creating plant-based meat that closely resembles genuine meat can increase acceptability in Malaysia due to its meat-heavy culture. Since, Consumers frequently characterize plant-based meat flavors as "pea-like", "bitter", or "earthy", reducing its resemblance to real meat (Gronewold, 2021). Excessive seasoning and artificial flavors can reduce the similarity to actual meat. Plant-based meat products are gaining popularity in Malaysia by addressing customer preferences, cost, and cultural factors effectively.

5.4 Limitation and Recommendation

This study effectively highlights a limitation in the scope of understanding due to its exclusive focus on Malaysia. It is difficult to compare purchase intents and influencing variables across different areas or nations due to the study's narrow geographic focus. This makes it difficult to investigate how cultural variations may affect consumer attitudes and behaviours towards plant-based meat. Therefore, future studies should consider conducting comparative analyses using data from other regions or countries where similar research has been undertaken, enabling researchers to gain valuable insights into the cultural intricacies that mold consumer preferences and behaviors towards plant-based meat products.

The second limitation we encountered was the communication barrier. Despite the use of judgmental sampling and online distribution, some interviewees still have difficulty mastering English, which leads to misunderstanding and refusal to participate. To solve this problem, future surveys should be conducted in multiple languages, especially for different ethnic groups like Generation Z. By providing questionnaires in Malay, Chinese, and English, we can ensure the clarity of the questionnaire and adapt to language preferences, reducing rejection and random answers.

Moreover, this study solely relied on quantitative methodologies, potentially limiting respondents from providing additional insights beyond the structured questions. The rigidity of response options might have constrained some participants, leading to potential biases in the outcomes. Subsequent studies may investigate the integration of qualitative approaches or the combination of qualitative and quantitative methods. In addition to providing quantitative data, qualitative approaches may give descriptive and in-depth insights into the motives, feelings, and opinions of participants. This allows for a more thorough knowledge of customer behaviour.

5.5 Conclusion

The study examines influences on plant-based meat buying intention in Generation Z in Malaysia and identifies factors impacting purchase likelihood. It provides valuable information for various stakeholders in Malaysia to enhance marketing methods. The research also highlights limitations and recommendations for future scholarly studies.

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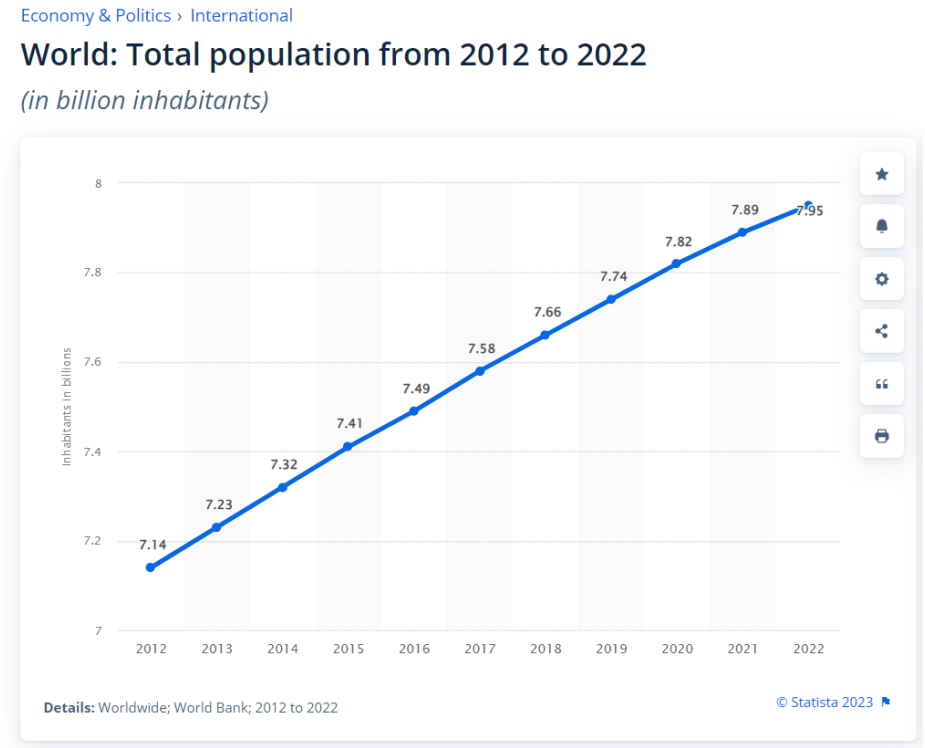
Appendices

Appendix 1.1 World Total Population from 2012 to 2022



Appendix 1.2 Meat Consumption of Global in 2022

Meat consumption Beef and veal / Pork meat / Poultry meat / Sheep meat, Thousand tonnes, 2022 Source: OECD-FAO Agricultural Outlook (Edition 2021)

Show: Chart Map Table Fullscreen share download My pinboard

Location	Beef and veal	Pork meat	Poultry meat	Sheep meat
World	71 636.8	112 584.8	133 696.0	15 965.4
BRICS	20 226.7	55 262.9	44 491.6	6 850.1
China (People's Republic of)	8 472.8	47 148.5	22 748.5	5 600.0
OECD - Total	28 574.8	41 083.3	51 038.0	2 021.6
India	1 083.9	294.2	4 253.7	735.7
Pakistan	2 007.3	0.1	1 647.2	490.7
Nigeria	402.9	298.1	199.1	418.3
Türkiye	1 210.4	0.0	1 914.3	405.9
Iran	719.5	0.0	2 305.4	398.1
United Kingdom	1 109.8	1 397.5	2 375.2	303.5
Russia	2 088.9	3 921.6	5 144.2	211.6
Kazakhstan	548.6	113.4	376.2	181.6

Appendix 1.3 Malaysia Population in 2021

Appendix 1.4 Meat Consumption of Malaysia in 2021

Meat consumption Beef and veal / Pork meat / Poultry meat / Sheep meat, Thousand tonnes, 2021 Source: OECD-FAO Agricultural Outlook (Edition 2021)

Show: Chart Map Table fullscreen My pinboard

Location	Beef and veal	Pork meat	Poultry meat	Sheep meat
Malaysia	262.7	223.5	1 881.0	41.4
Mexico	1 672.1	2 420.6	4 545.6	80.2
New Zealand	81.0	119.1	221.2	18.5
Nigeria	392.7	293.4	198.1	410.6
Norway	100.9	147.7	111.3	27.5
OECD - Total	28 801.1	40 993.6	50 596.7	2 016.7
Pakistan	1 960.3	0.1	1 607.0	484.3
Paraguay	123.5	197.9	43.3	4.0
Peru	200.6	178.7	1 785.8	39.0
Philippines	501.2	2 128.8	1 774.7	64.3
Russia	2 088.6	3 913.0	5 122.3	211.1
Saudi Arabia	197.3	17.9	1 393.0	174.5
South Africa	991.6	285.5	2 347.2	173.9

Appendix 1.5 Meat Consumption of Malaysia in 2022

Meat consumption Beef and veal / Pork meat / Poultry meat / Sheep meat, Thousand tonnes, 2022 Source: OECD-FAO Agricultural Outlook (Edition 2021)

Show: Chart Map Table fullscreen My pinboard

Location	Beef and veal	Pork meat	Poultry meat	Sheep meat
Malaysia	271.0	224.5	1 919.7	42.9
Mexico	1 690.8	2 451.1	4 607.5	80.8
New Zealand	79.6	120.3	223.3	18.3
Nigeria	402.9	298.1	199.1	418.3
Norway	102.8	148.6	112.8	27.3
OECD - Total	28 574.8	41 083.3	51 038.0	2 021.6
Pakistan	2 007.3	0.1	1 647.2	490.7
Paraguay	125.5	200.6	43.7	4.0
Peru	202.5	182.4	1 832.4	39.2
Philippines	511.4	2 167.8	1 837.1	65.7
Russia	2 088.9	3 921.6	5 144.2	211.6
Saudi Arabia	202.9	17.9	1 412.0	176.0
South Africa	1 025.8	292.0	2 392.1	175.5

Appendix 3.1 Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

FINAL YEAR PROJECT (FYP)

BACHELOR OF MARKETING (HONOURS)

The factors that influence the purchase intention of plant-based meat among Generation z in Malaysia.

Survey Questionnaire

We are undergraduate students enrolled in the marketing course at University Tunku Abdul Rahman (UTAR). We are conducting a comprehensive study to investigate the factors that exert influence on consumers' purchase intention regarding plant-based meat. In this regard, we kindly request your participation in our research by completing the attached questionnaire. Participation of this survey is voluntary. There are not inherently correct or incorrect responses to any of the statements contained within this questionnaire. The survey comprises 4 sections, and we kindly request that you respond to all questions in each section. This survey will take you approximately 5 - 10 minutes to complete.

The information provided will only be analyzed for academic purposes. Rest assured that the answers provided to this survey questionnaire will be treated with the utmost confidentiality. Your responses will be used solely for the purpose of our research study and will not be disclosed to any third parties. Your participation in this study is greatly appreciated.

Thank you for filling up this survey-questionnaire and your kind cooperation and participation in this study.

Best Regards,
Chan Yan Wen
Tong Yi Ting

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-

- For assessment of any application to UTAR
- For processing any benefits and servicesFor communication purposes
- For advertorial and news
- For general administration and record purposesFor enhancing the value of education
- For educational and related purposes consequential to UTAR
- For the purpose of our corporate governance
- For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

You may access and update your personal data by writing to us at yanwenchan02@1utar.my or yiting102002@1utar.my.

☐ I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

☐ I disagree, my personal data will not be processed.

Section A - Demographic Questions

This section is designed to collect information relating to our survey taker for data analysis purposes.

What is your gender?

☐ Male

☐ Female

What is your age?

☐ 18 -24

☐ 25 - 30

☐ 31 - 36

☐ 37 - 42

☐ 43 - 49

☐ 50 and above

Where is your current location?

☐ Perlis

☐ Kedah

☐ Penang

☐ Perak

☐ Selangor

☐ Negeri Sembilan

☐ Malacca

☐ Johor

☐ Kelantan

☐ Terengganu

☐ Pahang

☐ Kuala Lumpur

☐ Sabah

☐ Sarawak

What is your highest education level?

☐ No formal education

☐ Primary School

☐ Secondary School

☐ Diploma

☐ Undergraduate

☐ Postgraduate

What is your employment status?

☐ Employed

☐ Unemployed

What is your income / allowance level?

☐ RM 500 Below

☐ RM 501 - RM 1500

☐ RM 1501 - RM 2500

☐ RM 2501 - RM 3500

☐ RM 3501 - RM 4500

☐ RM 4500 Above

Do you aware of plant-based meat?

Definition of plant-based meat : Plant-based meat is produced directly from plants. Instead of relying on an animal to convert plants into meat, we can make meat more efficiently by skipping the animal and turning plant ingredients directly into meat.

☐ Yes

☐ No

Have you ever deliberately opted for plant-based meat?

☐ Yes

☐ No

So overall, are you interested in plant-based meat?

☐ Yes

☐ No

How many times have you consumed conventional meat in the last month?

☐ Everyday

☐ 4 – 5 times a week

☐ 3 – 4 times a month

☐ 2 -3 times a week

☐ 1 – 2 times a month

☐ Never

Section B – Purchase intention of plant-based meat.

I will try to buy plant-based meat if plant-based meat is available.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I would still buy plant-based meat if I can choose again.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I will recommend friends and family to buy plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I would still buy plant-based meat even though the price is higher.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I will buy plant-based meat in the future.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I intend to buy plant-based meat instead of animal-based meat in the future.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Section C – The factors that influence the purchase intention of plant-based meat.

Environmental concern

I care deeply about the state of the world's environment and what it means for my future.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Human beings are seriously damaging the environment.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Plant-based meat is produced in a way that does not disturb the balance of nature.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Plant-based meat is packaged in an environmentally friendly way.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am very concerned about the future environmental development.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am worried about the deterioration of our environmental quality.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Health concern

Health considerations are on my mind.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am conscious of changes in my health.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I strive to stay knowledgeable about my health.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am accountable for my health condition.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I monitor my health every day.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I believe I have made significant sacrifices for the sake of my health.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am willing to make significant sacrifices to eat as healthily as I can.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I hold the belief that grasping the knowledge of healthy eating is crucial.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Food Safety

Plant-based meat is more natural than traditional meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Eating plant-based meat is an unnatural practice, which makes us more separated from nature.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I am very concerned about the content of artificial additives and preservatives in plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

The quality and safety of plant-based worry me.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I care about the food processing of plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I care that the social order of food processing of plant-based meat is protected (Halal or Haram food items).

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Word-of-mouth

I recommend plant-based meat to many people.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I told my friends about plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I try to spread the benefits of plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I have made many positive advertisements for plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I will recommend the plant-based meat to others who seek my advice.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I will encourage other people to buy plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Section D – Attitude toward plant-based meat.

Overall, buying plant-based meat is a good thing.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Generally, buying plant-based meat is recommended.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Generally, buying plant-based meat is safe.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Plant-based meat will give me benefits.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

It is a good idea to purchase plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Buying plant-based meat is a wise choice.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

I have a very favorable attitude towards plant-based meat.

Strongly Disagree ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strongly Agree

Appendix 3.2 Source of Measurement Items

Variables	Items		Sources
Purchase Intention	PI1	I will try to buy plant-based meat if plant-based meat is available.	(Chen, 2022)
	PI2	I would still buy plant-based meat if I can choose again.	
	PI3	I will recommend friends and family to buy plant-based meat.	
	PI4	I would still buy plant-based meat even though the price is higher.	
	PI5	I will buy plant-based meat in the future.	(Kopplin & Rausch, 2021)
	PI6	I intend to buy plant-based meat instead of animal-based meat in the future.	
Environmental Concern	EN1	I care deeply about the state of the world's environment and what it means for my future.	(Chen, 2022)
	EN2	Human beings are seriously damaging the environment.	
	EN3	Plant-based meat is produced in a way that does not disturb the balance of nature.	(Lee & Yun, 2015)
	EN4	Plant-based meat is packaged in an environmentally friendly way.	
	EN5	I am very concerned about the future environmental development.	(Kopplin & Rausch, 2021)
	EN6	I am worried about the deterioration of our environmental quality.	
Health Concern	HC1	Health considerations are on my mind.	(Miguel et al., 2020)

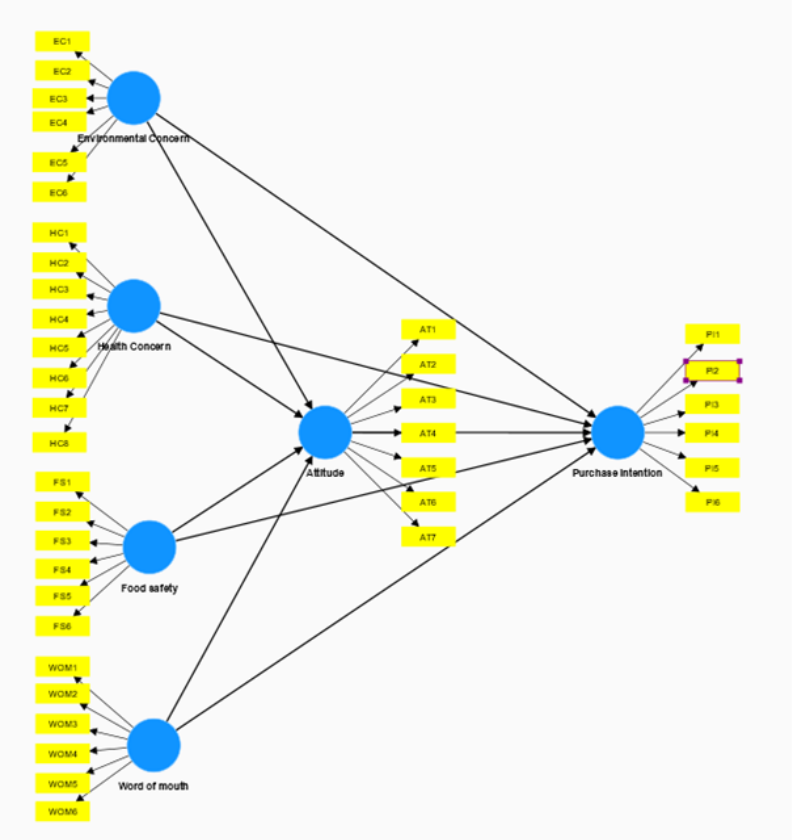
	HC2	I am conscious of changes in my health.	
	HC3	I strive to stay knowledgeable about my health.	
	HC4	I am accountable for my health condition.	
	HC5	I monitor my health every day.	
	HC6	I believe I have made significant sacrifices for the sake of my health.	(Chu, 2018)
	HC7	I am willing to make significant sacrifices to eat as healthily as I can.	
	HC8	I hold the belief that grasping the knowledge of healthy eating is crucial.	
Food Safety	FS1	Plant-based meat is more natural than traditional meat.	(Hwang et al., 2020)
	FS2	Eating plant-based meat is an unnatural practice, which makes us more separated from nature.	
	FS3	I am very concerned about the content of artificial additives and preservatives in plant-based meat.	(Iqbal et al., 2021)
	FS4	The quality and safety of plant-based worry me.	
	FS5	I care about the food processing of plant-based meat.	
	FS6	I care that the social order of food processing of plant-based meat is protected (Halal or Haram food items).	

Word-of-mouth	WOM1	I recommend plant-based meat to many people.	(Miguel et al., 2020)
	WOM2	I told my friends about plant-based meat.	
	WOM3	I try to spread the benefits of plant-based meat.	
	WOM4	I have made many positive advertisements for plant-based meat.	
	WOM5	I will recommend the plant-based meat to others who seek my advice.	(Konuk, 2019)
	WOM6	I will encourage other people to buy plant-based meat.	
Attitude	AT1	Overall, buying plant-based meat is a good thing.	(Halim et al., 2022)
	AT2	Generally, buying plant-based meat is recommended.	
	AT3	Generally, buying plant-based meat is safe.	
	AT4	Plant-based meat will give me benefits.	
	AT5	It is a good idea to purchase plant-based meat.	(Chen, 2022)
	AT6	Buying plant-based meat is a wise choice.	
	AT7	I have a very favorable attitude towards plant-based meat.	(Kopplin & Rausch, 2021)

Appendix 3.3: Pilot Test Results

	Cronbach's alpha
Attitude	0.969
Environmental concern	0.945
Food safety	0.884
Health Concern	0.909
Purchase Intention	0.955
Word of mouth	0.972

Appendix 4.1: Partial Least Square (SmartPLS 4) Model



Appendix 4.2 Outer Loading results

	Outer loadings		
AT1 <- Attitude	0.902		
AT2 <- Attitude	0.893		
AT3 <- Attitude	0.888		
AT4 <- Attitude	0.905		
AT5 <- Attitude	0.893		
AT6 <- Attitude	0.887	HC4 <- Health Concern	0.751
AT7 <- Attitude	0.894	HC5 <- Health Concern	0.741
EC1 <- Environmental Concern	0.826	HC6 <- Health Concern	0.760
EC2 <- Environmental Concern	0.689	HC7 <- Health Concern	0.797
EC3 <- Environmental Concern	0.799	HC8 <- Health Concern	0.746
EC4 <- Environmental Concern	0.783	PI1 <- Purchase Intention	0.897
EC5 <- Environmental Concern	0.777	PI2 <- Purchase Intention	0.912
EC6 <- Environmental Concern	0.773	PI3 <- Purchase Intention	0.886
FS1 <- Food safety	0.748	PI4 <- Purchase Intention	0.839
FS2 <- Food safety	0.600	PI5 <- Purchase Intention	0.867
FS3 <- Food safety	0.782	PI6 <- Purchase Intention	0.868
FS4 <- Food safety	0.701	WOM1 <- Word of mouth	0.899
FS5 <- Food safety	0.770	WOM2 <- Word of mouth	0.931
FS6 <- Food safety	0.739	WOM3 <- Word of mouth	0.922
HC1 <- Health Concern	0.795	WOM4 <- Word of mouth	0.895
HC2 <- Health Concern	0.784	WOM5 <- Word of mouth	0.908
HC3 <- Health Concern	0.767	WOM6 <- Word of mouth	0.895

Appendix 4.3 Composite Reliability and Average Variance Extracted results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude	0.958	0.959	0.966	0.800
Environmental Concern	0.869	0.885	0.900	0.602
Food safety	0.824	0.852	0.869	0.527
Health Concern	0.901	0.904	0.920	0.589
Purchase Intention	0.941	0.941	0.953	0.772
Word of mouth	0.958	0.959	0.966	0.825

Appendix 4.4: Heterotrait-monotrait Ratio of Correlations results

	Attitude	Environmental Concern	Food safety	Health Concern	Purchase Intention	Word of mouth
Attitude						
Environmental Concern	0.708					
Food safety	0.623	0.664				
Health Concern	0.662	0.811	0.630			
Purchase Intention	0.877	0.669	0.662	0.589		
Word of mouth	0.787	0.609	0.680	0.564	0.845	

Appendix 4.5 Path Coefficients results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Attitude -> Purchase Intention	0.492	0.488	0.052	9.484	0.000
Environmental Concern -> Attitude	0.230	0.232	0.070	3.300	0.001
Environmental Concern -> Purchase Intention	0.090	0.090	0.043	2.114	0.035
Food safety -> Attitude	0.039	0.041	0.062	0.624	0.533
Food safety -> Purchase Intention	0.065	0.067	0.045	1.462	0.144
Health Concern -> Attitude	0.158	0.159	0.055	2.879	0.004
Health Concern -> Purchase Intention	-0.052	-0.049	0.044	1.183	0.237
Word of mouth -> Attitude	0.511	0.506	0.041	12.382	0.000
Word of mouth -> Purchase Intention	0.363	0.363	0.048	7.511	0.000

Appendix 4.6 Collinearity Statistics (VIF) results

	VIF
Attitude -> Purchase Intention	2.958
Environmental Concern -> Attitude	2.450
Environmental Concern -> Purchase Intention	2.607
Food safety -> Attitude	2.053
Food safety -> Purchase Intention	2.058
Health Concern -> Attitude	2.226
Health Concern -> Purchase Intention	2.300
Word of mouth -> Attitude	1.935
Word of mouth -> Purchase Intention	2.708

Appendix 4.7 Specific Indirect effect results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Environmental Concern -> Attitude -> Purchase Intention	0.113	0.113	0.035	3.238	0.001
Food safety -> Attitude -> Purchase Intention	0.019	0.020	0.031	0.620	0.535
Health Concern -> Attitude -> Purchase Intention	0.078	0.078	0.028	2.762	0.006
Word of mouth -> Attitude -> Purchase Intention	0.252	0.247	0.033	7.632	0.000

Appendix 4.8 R-square results

	R-square	R-square adjusted
Attitude	0.662	0.658
Purchase Intention	0.771	0.768

Appendix 4.9 F-square results

	f-square
Attitude -> Purchase Intention	0.358
Environmental Concern -> Attitude	0.064
Environmental Concern -> Purchase Intention	0.014
Food safety -> Attitude	0.002
Food safety -> Purchase Intention	0.009
Health Concern -> Attitude	0.033
Health Concern -> Purchase Intention	0.005
Word of mouth -> Attitude	0.399
Word of mouth -> Purchase Intention	0.213

Appendix 4.10 PLS Predict results.

	Q^2predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
AT1	0.549	0.935	0.701	0.958	0.699
AT2	0.508	1.001	0.744	1.048	0.771
AT3	0.508	1.045	0.786	1.106	0.831
AT4	0.525	0.974	0.747	1.006	0.764
AT5	0.503	0.990	0.768	1.014	0.771
AT6	0.478	1.040	0.760	1.089	0.806
AT7	0.547	1.019	0.756	1.052	0.777
PI1	0.503	1.028	0.777	1.063	0.795
PI2	0.535	1.019	0.756	1.071	0.792
PI3	0.595	0.981	0.746	1.053	0.793
PI4	0.513	1.286	1.016	1.263	0.983
PI5	0.465	1.099	0.846	1.127	0.864