Faculty of Economics and Business

Application of Extended Theory of Planned Behaviour on Millennials' Green Purchase Intention

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Application of Extended Theory of Planned Behaviour on Millennials' Green Purchase Intention

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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ABSTRACT

This dissertation is conducted to examine the factors that have an impact on millennials' green food product purchase intentions. Hence, this study uses an extended theory of planned behaviour to determine if millennial green purchase intentions has been impacted in a post-COVID economy. The target of this study are Malaysian millennials, and a total of 400 respondents have willingly volunteered their time to fill out the questionnaire. The data collected in this study was analysed using the SmartPLS program, and showed that factors of attitude, perceived behaviour control, environmental concern, and environmental knowledge have a significant impact on Malaysian millennials' green food product purchase intention. However, this study also found that subjective norms do not have a significant impact on millennials' green food product purchase intention. The implications of this study are that Malaysian millennials intentions of purchasing green food products are based on their positive associations of the importance of preserving the environment, hence businesses and policymakers should create advertisements or campaigns that appeal to their concern for the environment to encourage more millennials to consume green food products.

Keywords: Millennial, theory of planned behaviour, green food product purchase intentions

ABSTRAK

Disertasi ini dikaji untuk mengkaji faktor-faktor yang mempengaruhi niat membeli milenial terhadap produk makanan hijau. Justeru, kajian ini menggunakan teori lanjutan tingkah laku terancang untuk mengetahui sama ada niat membeli produk makanan hijau milenial telah dipengaruhi dalam ekonomi pasca-COVID. Kajian ini dilakukan atas golongan milenial Malaysia, dan sebanyak 400 orang responden telah mengisi soal selidik secara sukarela. Data yang dikumpul telah dianalisis mengguna program SmartPLS, dan menunjukkan bahawa faktor sikap, tingkah laku kawal, keprihatinan alam sekitar, dan pengetahuan alam sekitar mempunyai impak signifikan terhadap niat membeli produk makanan hijau golongan milenial Malaysia. Namun begitu, kajian ini juga telah mendapati bahawa norma subjektif tidak mempunyai kesan yang signifikan terhadap niat membeli produk makanan hijau. Implikasi kajian ini menunjukkan bahawa niat membeli produk makanan hijau golongan milenial Malaysia adalah berdasarkan pengetahuan positif mereka terhadap kepentingan memelihara alam sekitar. Oleh itu, perniagaan dan penggubal dasar seharusnya membuat iklan atau kempen yang menarik perhatian mereka terhadap kepentingan menjaga alam sekitar dan menggalakkan lebih banyak golongan milenial untuk memakan produk makanan hijau.

Kata kunci: *Milenial, teori lanjutan tingkah laku terancang, niat membeli produk makanan hijau*

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LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
CGS	Centre for Graduate Studies
DOSM	Department of Statistics Malaysia
EC	Environmental Concern
EK	Environmental Knowledge
PBC	Perceived Behaviour Control
PI	Purchase Intention
SN	Subjective Norms
TPB	Theory of Planned Behaviour
UNIMAS	Universiti Malaysia Sarawak

CHAPTER 1

INTRODUCTION

1.1 Introduction

Chapter 1 includes background of study, problem statement, research questions and objectives of the study, significance of study, definition of key terms, and scope of study. These sections briefly discuss millennials and their increasing preference for green food products, as well as introduce the Theory of Planned Behaviour (TPB) as a way to identify the factors that motivate millennials to purchase green food products.

1.2 Background of the Study

In recent times, the culture of consumerism, which refers to the excessive consumption and acquisition of goods and services, has increased significantly in modern times when compared to those of a decade ago. This has caused significant environmental degradation, leading to various issues such as climate change, loss of biodiversity, and depletion of natural resources. This has also resulted in unsustainable depletion of the world's natural resources and caused irreparable damage to the environment (George & Nair, 2022; Joshi & Rahman, 2015), such as global climate change and higher pollution levels, and this has even threatened the survivability of flora and fauna species (Chen & Chai, 2010). Climate change, in particular, has emerged as a pressing issue, with scientists warning of its catastrophic impacts on the planet and human societies. Countries like Malaysia are facing the negative effects of climate change (Moorthy et al., 2021). This has caused consumers to be more aware of the need to preserve the environment to safeguard their future. Consumer choices can subsequently drive demand for sustainable products and services, putting

pressure on companies to adopt more sustainable practices. As a result, businesses have become pressured by society to engage in more sustainable practices that have minimal impact on the environment (Wilmer et al., 2018).

Businesses are now producing eco-friendly products and marketing them to be beneficial for the environment (George & Nair, 2022). As such, governments around the world have begun to realise that environmental issues are a very tangible threat to humanity and have started to take steps to minimise the negative impact of human activity on the environment (Ho et al., 2020; Joshi & Rahman, 2015). One of these methods is increasing consumer awareness on the benefits of green purchasing behaviour (Djaelani et al., 2020). The increase in awareness of environmental issues over the years has been the result of extensive and far-reaching media campaigns by governments to educate their citizens (Al Mamun et al., 2018; Saeed et al., 2013), thus leading to consumers who are more environmentally conscious of their purchasing behaviour and consumers who would seek to purchase goods and services that have minimal impact on the environment (Azami et al., 2018; Laroche et al., 2001; Mishra et al., 2014; Suki, 2016). These campaigns are designed to educate citizens about the impact that their actions can have on the environment and to encourage them to take steps to reduce their environmental footprint. As such, these campaigns may include television and radio advertisements, social media campaigns, print advertisements, and other forms of media. The goal of these campaigns is to reach as many people as possible and to communicate the message that environmental issues are important and require action.

This change in consumer sensibilities, noticeably spearheaded by the younger generation of consumers, has led to a rise of ‘sustainable development’ (Joshi & Rahman, 2015). Although the term has been in use for a long time, it advocates for companies to be more sustainable and reduce over-harvesting of resources, while also promoting a business culture that is aware of the negative impact of their operations and actively works to minimise its effect on the environment. Subsequently, consumers should also be aware that their decision to buy, use, and dispose of products will likewise affect the environment (Joshi & Rahman, 2015). Hence, green products have minimal consequences on the environment (Al Mamun et al., 2020), as they are usually made of or from eco-friendly, recycled, or biodegradable materials that can be easily reused once disposed of or can be safely broken down without leaving harmful residue that threatens the environment. Thus, the more media campaigns are being carried out by both private and public organisations, the more consumers are made aware of the benefits of purchasing green products, thus increasing the likelihood of green purchase intentions. Governments around the world recognize the importance of public education in addressing these issues, and by educating their citizens about the impact that their actions can have on the environment, it is hoped that people will make more environmentally conscious choices in their daily lives.

1.2.1 The Malaysian Scenario

In this local context, Taib et al. (2022) claimed that in Malaysia, green products are difficult to find stocked in supermarkets and are comparatively more expensive than their conventional counterparts. Hence, according to the author, despite the benefits of purchasing green products, many would choose to forego changing their purchasing behaviour to specifically buy green products and instead choose to remain loyal to their current brands of services or products. This demonstrates that part of the reluctance of Malaysians to purchase green products is the perception that green products are expensive. Many Malaysians believe that green products are priced higher than their conventional counterparts, which makes them unaffordable for most people. This perception is partly due to the fact that green products are often associated with premium pricing, which can serve as a deterrent for price-sensitive consumers.

Additionally, the lack of availability of green products in certain areas or stores may also contribute to this perception. In past studies, Noor et al.'s (2012) study on green product purchases showed that Malaysians have little experience with purchasing green products, with only 30% of respondents affirming that they have done so. This sentiment is shared by Al Mamun et al. (2018), who argue that part of the reason why Malaysians do not practice green consumerism in their daily lives is due to their ignorance of the benefits of purchasing green products. They are unaware of the benefits of using green products or how they can contribute to environmental protection through green consumerism.

The very idea of being environmentally friendly is still a relatively new concept for Malaysians (Rahman, 2018), and both the government and private sector have conducted extensive campaigns to bring awareness to Malaysians (Zahari & Esa, 2019). Some of the more prominent examples include hypermarkets such as Giant and Aeon that have implemented 'No Plastic Bag Days' (Tang, 2014; Zahari & Esa, 2019), where customers are urged to bring their own reusable or recyclable bags to carry groceries instead of being supplied plastic ones at the cashier checkout. Additionally, green products may also include things such as having a sustainably built house that minimises resource waste. Hence, Penang-based real estate developer IJM Land has launched an environmentally sustainable real estate project dubbed 'THE LIGHT Waterfront Penang', boasting advantages such as the use of eco-friendly building materials, state-of-the-art ICT infrastructure, as well as water and energy-saving technologies to help its homeowners reduce waste (Tang, 2014).

Therefore, it can be seen that even though some Malaysian companies are playing their part in promoting and encouraging green consumerism among the public, there are still factors that prevent Malaysian consumers from doing so, such as green products not being widely available in supermarkets or being more expensive than conventional products. Thus, this study is conducted in a local context to identify the factors that have the most significant impact on influencing Malaysian millennials to choose to buy green food products.

1.3 Problem Statement

It can be seen that the global organic food market has grown more than six times its value, from USD 17.9 billion in 2000 to USD 114 billion in 2018 (Schlatter et al., 2020), while the environmentally friendly and sustainable food market is forecast to grow even further beyond 2021 to 2028, reaching an estimated value of USD 170.5 billion by 2028 (Data Bridge Market Research, 2021). This shows that there is tremendous growth and opportunity for businesses to consider entering the green food product industry. Nowadays, consumers are drawn to organic food products or green food products simply due to the perception that they are a safe and healthy food option that is also beneficial to the environment (Janssen, 2018; Latip et al., 2020). This is because the advent of the coronavirus (COVID-19) pandemic in 2019 threw the world into disarray, causing heavy and unavoidable disruption in the lives of people as well as jeopardising the operation of many industries, such as production, manufacturing, and logistics, causing many vital processes to grind to a screeching halt due to travel restrictions (World Health Organization (WHO), 2020). This disruption of the supply chain has caused tremendous upheaval, causing the prices of many goods to rise due to a lack of available supply, and is especially prevalent in the case of food. As such, green food products are of interest to consumers, especially in the wake of the pandemic, as it has increased consumers' apprehension towards conventional food products, causing a higher likelihood of consumers making more health-conscious decisions and driving growth for the green food product market.

Previous research in this field have been conducted in many different regions of the world, such as the purchase intention of sustainably made clothes by Pakistani university students

(Saeed et al., 2013), the purchase intention of green products among Indian adults (Paul et al., 2016), the purchase intention of green skincare products by Taiwanese university students (Hsu et al., 2017), the purchase intention of products with green packaging among young consumers in Indonesia (Tuwanku et al., 2018), the purchase intention of green products among Iraqi university students (Abdulsahib et al., 2019), the purchase intention of green products among Chinese university students (Bhutto et al., 2019), the purchase intention of green household appliances by South African millennials (Dilotsotlhe, 2021), the intention of use of autonomous vehicles by urban Chinese citizens (Jing et al. 2019), the purchase intention of green products in Indian millennials (Shukla, 2019). It can be seen that a majority of these studies conducted in countries outside of Malaysia rarely distinguish between green products and do not make a distinction between large machines, such as household appliances, household supplies such as laundry detergent or soap, or green food to be consumed by an individual. Hence, it is difficult to determine if the factors influencing the purchase intention can be specifically identified for green food products. Furthermore, a significant portion of these studies also use university students to serve as the respondent pool, possibly due to the ease of access to a large sample size. However, this methodological gap also causes limitations in deciphering the results of the study, as university students may not accurately represent the buying power of the population of a country and may not have the ability to purchase green products despite expressing concerns about the environment and wishing to do their part in promoting consumption of green food products. Therefore, this study will attempt to address this gap by extending the age range of respondents, as this study will gather data from millennials, which represent a wider age group.

Meanwhile, past studies conducted in Malaysia include the study of factors influencing Malaysian consumers' intention to purchase products with green packaging (Moorthy et al., 2021; Rajendran et al., 2019). Jaini et al. (2020) used the value-belief-norm (VBN) theory to investigate Malaysians' purchase behaviour of green cosmetics. Additionally, Tan et al. (2019) examined the general view of Malaysian millennials' green product buying behaviour, while Alam et al. (2019) and Teoh et al. (2022) have looked specifically into Malaysians' purchase intention of green or energy-efficient household appliances. Furthermore, past studies have shown that elements of the theory of planned behaviour have a significant positive impact on purchase intention, such as academic staff from Universiti Teknologi Mara in the states of Kedah, Pulau Pinang, and Perlis (Salleh et al., 2010), Pakistani university students (Ali et al., 2011), working-class individuals in Klang Valley, Malaysia (Tang, 2014), and low-income households in the coastal regions of Peninsular Malaysia (Al Mamun et al., 2018).

Hence, it can be assumed that Malaysians' purchase intention, especially towards green food products, may have been impacted by the COVID-19 pandemic, as evidenced by the Department of Statistics Malaysia (DOSM) reporting that the purchasing power of Malaysian households dropped by 16.7% in 2020 (The Edge Markets, 2021). Therefore, this study assumes that consumer beliefs may have changed significantly since then, especially after globally significant events such as the COVID-19 pandemic, causing consumers to be more mindful about their health and more selective in their consumption of food. Based on the studies mentioned, there exists a contextual gap, whereby there have been studies into other green products conducted in a Malaysian context; however, studies into green food products in Malaysia are few and far between and mostly outdated.

Despite the many benefits of green food products, there is a gap in research into this area, especially in a post-COVID world. In this setting, consumer behaviour is not yet fully understood, and buying power may have diminished as compared to the economic situation before the pandemic (The Edge Markets, 2021). In the food industry, green products are becoming more popular as consumers seek to reduce their environmental impact through their purchasing choices (Azami et al., 2018; Laroche et al., 2001; Mishra et al., 2014; Suki, 2016). Additionally, the rise of environmental concerns and the increasing demand for sustainable products have led to a growing interest in understanding consumers' purchase intentions towards green food products. As time passes, these concerns about environmental sustainability have become increasingly important to consumers, particularly millennials. Millennials are currently the largest consumer group, and Butler (2018) notes that social and environmental factors frequently influence their purchasing decisions. Therefore, millennials as a market segment would have undeniable sway in determining consumer purchase intentions for years to come, and it would be in the best interests of businesses to determine what drives millennials to purchase and consume green food products. There is also a gap in the current body of knowledge, as similar studies in the vein of examining factors influencing Malaysian consumers' purchase intention of green food products have been conducted prior to the pandemic (Phuah et al., 2011; Tan & Mariadass, 2019; Thambiah et al., 2015), and this is considered outdated for the purposes of this study. The studies conducted in a Malaysian context are fairly outdated, having been conducted for almost 10 years, whereas newer studies are focused on a specific niche unrelated to food, such as Penangites' purchase intention of green home appliances in the case of Teoh et al. (2022). Therefore, it can be summarised that none of the aforementioned studies have used an extended TPB model using environmental concern and environmental knowledge as

antecedents in predicting millennials' green food product purchase intention. Hence, the specific problem statement of this study is to identify how the factors in the proposed extended TPB model will impact Malaysian millennials' green food product purchase intention.

Furthermore, businesses should place greater importance on how social influence can affect the decision-making process of individuals and how this may affect their purchase intentions for products and services. Wilmer et al. (2018) inferred that societal pressure, such as those from activists or environmental groups, is among the strongest factors pushing for companies to be more environmentally friendly in their business practices and to minimise the impact of corporate activities on the environment, and that climate change would have negative consequences for all parties involved (Chen & Chai, 2010; Moorthy et al., 2021).

Hence, this study attempts to address this gap by investigating the factors that influence green food product intentions. Despite the availability of green food products in the Malaysian market, the actual purchase intention of millennials towards these products is not well understood. Businesses are cautious about taking the next step and are unable to properly advertise and market green food products to consumers, and this may result in losses for the business due to the higher costs associated with green food products. This has caused businesses selling green food products to be unsure of the current economic situation and hesitant in marketing their products to consumers. Thus, they may miss out on a considerable amount of profit due to the positive increase in consumer perception of green food products.

1.4 Research Questions

By extending the Theory of Planned Behaviour (TPB) with the additional constructs of environmental concern and environmental knowledge, this study aims to answer the following questions:

- What is the impact of attitude on the green food product purchase intentions of millennials?
- What is the effect of perceived behaviour control on the green food product purchase intentions of millennials?
- What is the result of subjective norms on the green food product purchase intentions of millennials?
- What is the influence of environmental concern on the green food product purchase intentions of millennials?
- What is the impact of environmental knowledge on the green food product purchase intentions of millennials?

1.5 Research Objectives

1.5.1 General Objectives

This study aims to find out whether an extended theory of planned behaviour can explain millennials' green food product purchase intention.

1.5.2 Specific Objectives

- To investigate the impact of attitude on the green food product purchase intentions of millennials.
- To analyse the impact of perceived behaviour control on the green food product purchase intentions of millennials.
- To explore the effect of subjective norms on the green food product purchase intentions of millennials.
- To research the influence of environmental concern on the green food product purchase intentions of millennials.
- To examine the impact of environmental knowledge on the green food product purchase intentions of millennials.

1.6 Significance of the Study

The growing concern for the environment and sustainability has led to an increase in the demand for green food products. This has given rise to a need to understand the factors that influence millennial consumers' purchase intentions towards these products. The Theory of Planned Behaviour (TPB) has been widely used to explain consumer behaviour. As environmental concerns like air and water pollution become more mainstream and embedded in the consciousness of the public, more consumers will feel a sense of responsibility to protect the environment and consider switching to green products to reduce their carbon footprint. Hence, efforts by governments around the world to encourage their citizens to reduce, reuse, and recycle to minimise waste have managed to change some consumers' mindsets (Saeed et al., 2013). Tang (2014) has encouraged the study of consumer purchase intentions of green products in response to the Malaysian government's efforts to promote sustainable development, particularly for manufacturers, so that they minimise their carbon footprint in an attempt to save the environment. By encouraging consumers to switch to green products, companies can tap into a new niche in the market: consumers who are concerned about the environment and are willing to pay the comparatively higher prices for green products. Furthermore, Durai (2022) projected that global food trends would continue to grow and evolve to incorporate green and healthier options in response to the COVID-19 pandemic. It can be seen in predictions of the growth of the sustainable food industry, reaching an estimated value of USD 170.5 billion by 2028 (Data Bridge Market Research, 2021). Hence, there is significant growth opportunity for players in the green food industry, and a better understanding of what factors shape and guide millennials' purchase intentions towards green food products is critical for businesses to understand in order to capture market share since millennials are also the age group that is more environmentally conscious

and willing to spend more in support of businesses that manufacture green products (Butler, 2018).

Additionally, it is important to understand the factors that influence Malaysian millennials' green food product purchase intentions so that the existing body of literature can be expanded, as there are few studies that cover these green food products specifically. To entice consumers to make the switch to green food products, it is important to know what factors affect millennials' purchase intentions and thus drive sales for the company. Therefore, this study is conducted to look into the driving factors of Malaysian millennials in their purchase intention of green food products. Through gaining a greater understanding of how and what millennial consumers think about green food products, it will enable companies to cater to this new, more environmentally conscious market segment, which is the intention of this study. Thus, businesses and decision-makers in organisations can shape their marketing and advertising strategies to encourage more of such behaviour, which results in consumers being more likely to purchase and consume green food products, thus driving profitability and increased ROI for businesses.

Furthermore, this study can also help contribute to the existing body of knowledge by updating the TPB model to be more relevant in today's world by incorporating additional factors such as environmental concern and environmental knowledge to better understand what drives millennials' green food product purchase intention in today's time period.

Moreover, green food products are beneficial to the environment, and by increasing the understanding of millennials' purchase intentions, more steps can be taken to encourage them to switch over from conventional food products. Hence, the more consumers are aware of and consume green food products, the better it will be for the environment (Abdulsahib et al., 2019). Therefore, this study is important to understand millennials' green food product purchase intention in a post-COVID world and to fill in gaps in the existing body of literature.

1.7 Definition of Key Terms

Millennials

The segment of consumers usually born between 1980 – 2000 (Pew Research Center, 2014; Shukla, 2019).

Theory of Planned Behaviour

Situation-specific factors, which are attitude, perceived behaviour control, and subjective norms, may have an effect on an individual's behaviour (Ajzen, 1991).

Attitude

Attitude can be seen as a person's evaluation of whether a particular behaviour is viewed in positive or negative terms (Ajzen, 1991). The more a person views a certain behaviour as positive, the more likely it is that they will keep conducting said behaviour, and vice versa.

Perceived Behaviour Control

Perceived behaviour control is an individual's perception of the difficulty level when carrying out a certain behaviour (Ajzen, 1991).

Subjective Norms

Subjective norms are perceived social pressure, or the opinions of others that may or may not have an effect on an individual's decision to behave in a certain manner (Ajzen, 1991). These norms are the cultural values shared by an individual's social group.

Environmental Concern

An individual shows environmental concern when they are aware of environmental issues and are actively finding solutions to solve them (Altin et al., 2014; Suki, 2016).

Environmental Knowledge

Environmental knowledge is an individual's knowledge of the environment and includes one's general knowledge of the facts about it and how an individual's behaviour may have an impact on the environment (Choi & Johnson, 2019; Fryxell & Lo, 2003).

Purchase Intention

An individual that exhibits a certain behaviour, does so because there is an intention; thus, a purchase behaviour occurs when there is a purchase intention (Ajzen, 1991).

1.8 Scope of the Study

This study will be carried out from the perspective of the consumers to better achieve the objectives of this study. Tan et al. (2019) observed that a significant amount of the studies conducted on consumer behaviour towards green products are done in the context of Western cultures. Different cultures, values, politics, economy, and personal beliefs vary greatly across cultures, especially in the context of the West and East hemispheres, and even on a smaller scale, where sometimes neighbouring countries may share widely different opinions on the same subject. Hence, this study attempts to add to the existing literature by examining consumers from other markets across the world and what factors motivate them to consider purchasing green food products. Such research can also be used by companies to better understand the motivations of millennial consumers and thus improve their marketing strategies to capture market share.

In this study, millennials from the Malaysian state of Melaka will be used as respondents, and a total of 400 responses will be collected, according to Cochran's formula for determining a sample size. A Google Form questionnaire will be distributed digitally via social media platforms such as WhatsApp, and respondents will receive a link to fill out their responses in the questionnaire. Due to time and budgetary constraints, this study will only focus on millennials living in the state of Melaka, as sourcing respondents from across Malaysia is a large-scale, as well as a costly and time-consuming endeavour.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Chapter Two includes literature review, theories used, and development of hypotheses used in this study.

According to Chen and Chai (2010), human consumption of goods and services has increased exponentially in recent decades, driven by desires to consume extravagant food or own the most technologically advanced gadget. This has resulted in the mining, farming, harvesting, or processing of the Earth's natural resources on a scale that has never been seen before, which has caused irreparable damage to the environment as a direct consequence. . Environmental changes such as greenhouse gas emissions, pollution of earth, air, and water, disruption of habitat for both plants and animals, and emerging trends in the global market such as 'conspicuous consumption', among others, have led consumers to become more aware of what products they buy and consume (Sreen et al., 2018). Hence, the term 'green' is more commonly used nowadays by marketing departments to use buzzwords and denote consumers who are responsible in their consumption practices, ecological marketing, being socially responsible, eco-friendly, sustainable, or environmentally friendly practices (Tseng & Hung, 2013). It is so widely prevalent these days that status-conscious individuals have decided to 'go green' and only purchase goods if companies have been proven to have ethically sourced their raw materials with minimal impact on the environment.

According to Bosnjak et al. (2020), there have been over 4,200 studies conducted in the field of social and behavioural science using the Theory of Planned Behaviour (TPB) as their theoretical framework. Qi (2021) documents that as of 2020, TPB has been mentioned almost 90 thousand times in studies that can be accessed using Google Scholar. According to George and Nair (2022), such studies may extend the use of TPB through the support of relevant constructs. In this study, the extension of constructs includes those such as environmental concern (Azami et al., 2018; Saeed et al., 2013; Salleh et al., 2010; Shukla, 2019; Tuwanku et al., 2018; Yadav & Pathak, 2016) and environmental knowledge (Azami et al., 2018; Choi & Johnson, 2019; Saeed et al., 2013; Yadav & Pathak, 2016). This is done because adding contextually relevant variables may help improve the explanatory ability towards green purchase intention, as argued by Tuwanku et al. (2018).

2.2 Theory of Planned Behaviour (TPB)

Dean et al. (2011) claim that the Theory of Planned Behaviour (TPB) is the single most crucial social psychological theory in forecasting human behaviour, an opinion shared by Joshi and Rahman (2015), whose meta-analysis on consumer green purchase behaviour showed that a majority of studies on this subject use some variation of TPB. Initially theorised by Ajzen (1991), TPB considers situation-specific factors that may have an effect on whether someone has the intention to behave in a certain manner. These factors are attitude, subjective norms, and perceived behaviour control. The degree to which one has a favourable or unfavourable judgement or appraisal of said intention is referred to as attitude; the believed social pressure from a significant person to engage in a particular behaviour is known as subjective norms; and whether a behaviour is easy to do or difficult to execute,

and whether it is under one's control or not, is referred to as perceived behavioural control (Qi & Ploeger, 2019). Studies have shown that these factors can influence a consumer's purchase intentions (Al Mamun et al., 2018; Cheung et al., 2012; Ramayah et al., 2012; Scalco et al., 2017; Shukla, 2019; Tuwanku et al., 2018; Yadav & Patak, 2017). Furthermore, if someone has experienced positive associations with executing a certain behaviour, whether it be approval by peers or respected individuals, social endorsement, or having received support during making such a behaviour, it will be more likely that said person will continue exercising such behaviour (Ajzen, 1991).

This can be further extended into the field of consumer behaviour as a tool that can predict consumer purchase intention (Wei et al., 2017; Yadav & Pathak, 2016; Yadav & Pathak, 2017). In the case of Liobikienė et al. (2016), several European Union (EU) countries have used TPB to determine the level of green consumerism in their respective countries and have used the collected data to assist in drafting and implementing new government policies. In the study, it was determined that consumers in Denmark and Austria had more choices in green product options, while governments in Sweden, Italy, and the Czech Republic realised that they had to intervene and apply government subsidies to bring down the price of the relatively expensive green products, as their citizens were more price sensitive (Liobikienė et al., 2016).

The Theory of Planned Behaviour (TPB) is a well-established theoretical framework that can explain and predict consumers' intentions to purchase green products (Ajzen, 1991). TPB is a widely used model in the social sciences, especially in the field of consumer

behaviour (Tuwanku et al., 2018). The use of TPB as a theoretical framework in the study of green consumer behaviour can help researchers better understand and predict factors that motivate an individual's desire towards green consumerism (Tuwanku et al., 2018). In other words, it can help researchers understand the factors that influence individuals' attitudes, intentions, and behaviours. According to the TPB, an individual's intention to perform a particular behaviour is influenced by their attitudes, subjective norms, and perceived behaviour control (Ajzen, 1991). Attitudes refer to the individual's positive or negative evaluation of the behaviour, subjective norms relate to the individual's perception of social pressure to perform the behaviour, and perceived behaviour control refers to the individual's perceived ease or difficulty of performing the behaviour. In the context of millennials' green food product purchase intentions, TPB can be used to explain why individuals make environmentally conscious food choices. Past studies have shown that variables of TPB, such as attitude (Ali et al., 2011; Choi & Johnson, 2019; Shukla, 2019; Sreen et al., 2018), subjective norms (Abdulsahib et al., 2019; Chen & Deng, 2016; Choi & Johnson, 2019; Tuwanku et al., 2018), and perceived behaviour control (Al Mamun et al., 2018; Bhutto et al., 2019; Paul et al., 2016; Yadav & Pathak, 2016), have a significant positive effect on green purchase intention. Additionally, the newness of the concept of green consumerism may also be a factor in consumers' purchase intentions, as some people may not have the knowledge or awareness of the importance of practicing environmentally friendly behaviour (Rahman, 2018).

However, in certain contexts, additional factors may be useful in improving the predictive power of TPB, and some studies have extended the TPB model to include additional factors that may influence green food product purchase intentions. For example,

a study by Xu et al. (2020) proposed an extended TPB model that included environmental concern and trust in organic food as additional predictors of green food product purchase intentions among Chinese millennials. The inclusion of environmental concern is justified by Hines et al. (1987), who argue that research covering topics of environmentalism must include an individual's concern for the environment since it may have a direct effect on eco-friendly behaviour. Therefore, this study extends the variables of TPB to include factors of environmental concern and environmental knowledge to determine if Malaysian millennials' level of education on environmental issues would significantly impact their green food product purchase intentions. Many studies have built upon Ajzen's (1991) theory of planned behaviour (TPB) in an attempt to understand consumer purchase intention (Al Mamun et al., 2018; Bhutto et al., 2019; Dilotsotlhe, 2021; Pothitou et al., 2016; Tiwari et al., 2011; Tuwanku et al., 2018), while others have extended the theoretical framework to include constructs as antecedents to purchase intention, such as environmental concern (Azami et al., 2018; Saeed et al., 2013; Salleh et al., 2010; Shukla, 2019; Tuwanku et al., 2018; Yadav & Pathak, 2016), or environmental knowledge (Azami et al., 2018; Choi & Johnson, 2019; Saeed et al., 2013; Yadav & Pathak, 2016). Hence, this study will include the additional constructs of environmental concern and environmental knowledge to serve as an antecedent to green food product purchase intention.

Studies by Tuwanku et al. (2013), Yadav and Pathak (2016), Abdulsahib et al. (2019), Al Mamun et al. (2018), Bhutto et al. (2019), Shukla (2019), and Dilotsotlhe (2021) have shown that attitude, subjective norms, and perceived behaviour control are significant predictors of green purchase intention among respondents. If an individual has a positive attitude towards a certain behaviour, it is more likely that they will continue said behaviour

(Ajzen, 1991). Hence, if a respondent has a positive attitude towards eco-friendly behaviour, such as buying and using green products, it is very likely that the respondent will have green purchase intentions (Paul et al., 2016; Sharma & Dayal, 2016). Additionally, subjective norms have a significant effect on the respondents' green purchase intentions, implying that an individual's social group does play an important role in an individual's green purchase intentions, as they would defer to friends' or family members' opinions to determine if buying and using green products is an acceptable behaviour.

Teoh et al. (2022) studied the factors that influenced Penangites' purchase intention of green home appliances, using TPB as an underpinning theory to guide their use of independent variables, namely post-sales service, brand recognition, environmental mindfulness, and the price of a product. Teoh et al. (2022) concluded that Penang consumers are strongly influenced by brand equity, environmental awareness, and product pricing when considering the purchase of green home appliances and that they do not mind much about the after-sales services provided. Penang consumers are fiercely brand loyal, as the factor has shown a significant impact on purchase intention, as has product pricing, due to the fact that home appliances are expensive purchases, made even more so by a green label (Teoh et al., 2022).

Tan and Mariadass (2019) found that advertisements for green products have a significant positive impact on young Malaysian adults' purchase intentions and advocated for greater use of advertising mediums on the part of companies as a strategy to boost sales of green products. As the younger generation of adults is more technologically literate and

connected through online platforms such as social media, businesses can reach out to these potential customers through online marketing schemes and increase awareness of the advantages of the use and consumption of green products, such as by suggesting that they look out for eco-labels that clearly delineate green products from other conventional products. By educating their potential customers about the benefits of green products, businesses may be able to sway their opinions towards becoming more eco-friendly and subsequently strengthen the concept that green products are beneficial not only to the consumer but also to the environment (Tan & Mariadass, 2019).

Therefore, this study attempts to understand the factors that may influence millennials' green food product purchase intention; thus, environmental concern and environmental knowledge can be considered significant factors that may influence their purchase intentions of green food products. According to Abdulsahib et al. (2019), consumers who have enough knowledge and awareness of environmental issues are more likely to show positive associations with the purchase and consumption of green products. Individuals that have differing levels of concern for environmental issues will react differently when presented with information about the importance of sustainability (Magnier & Schoormans, 2015). Thus, it can be inferred from the above statements that environmental concern and environmental knowledge have a significant impact on purchase intention.

2.3 Definition of Variables

2.3.1 Attitude

Attitude can be seen as a person's evaluation of whether a particular behaviour is viewed in positive or negative terms (Ajzen, 1991). The more a person views a certain behaviour as positive, the more likely it is that they will keep conducting said behaviour, and vice versa, where a person will be less likely to behave in a manner that they have a negative association with (Ajzen, 1991; Bhutto et al., 2019; Tuwanku et al., 2018). Attitude is broadly considered a long-term, generalised evaluation and judgement by an individual towards an object, of said object, which may refer to an item, an individual, or even a stimulus, whether tangible or intangible (Qi, 2021). Attitude also involves an individual's perception of the potential consequences of performing, or non-performing, a certain behaviour (Leonard et al., 2004; Ramayah et al., 2010). Individuals are more likely to behave in a certain way if they are of the belief that doing so would be beneficial to them. It is a psychological emotion that is evaluated by an individual, and if it is evaluated in a positive manner, there is a higher possibility that said individual will associate the behaviour in a positive manner.

Attitudes can be formed through various mechanisms, such as through personal experience. Personal experience can shape attitudes through direct exposure to a behaviour and its consequences. For example, if a parent calms a crying child by giving it sweets, the child may unintentionally associate the behaviour of crying with receiving sweets, which is a positive association for the child and may result in future crying behaviour whenever the child wants sweets. A person will also be more likely to behave in a certain manner if they believe that doing so will result in gaining certain advantages (Al Mamun et al., 2018). Hence,

an individual uses their reasoning to evaluate the potential costs and benefits of engaging in a certain behaviour, and if it is concluded that participating in a type of behaviour would provide benefit to said individual, the behaviour would be carried out.

Abdulsahib et al. (2019) believe that when a consumer perceives themselves as having an impact on the safety and care of the environment, their attitudes will shift towards engaging in more eco-friendly behaviour, such as reducing waste in their lives or eating healthier. The attitude of an individual is dependent on how they carry out their daily activities. In the context of green products, some studies have shown that consumers who have admitted to having concerns about the environment have demonstrated more eco-friendly behaviour (Paul et al., 2016; Sharma & Dayal, 2016; Wang et al., 2014). Consumers that have demonstrated positive attitudes towards green products are more likely to learn more about them, and subsequently have higher intentions of purchasing them (Paul et al., 2016; Sharma & Dayal, 2016). A study by Prakash and Pathak (2017) found that attitude does have a positive impact on consumers' green purchase intention and that a product with green packaging will influence their intentions of buying and consuming green products. An individual having a positive attitude towards consumption of green products may also correlate with them having higher levels of eco-friendly behaviour, such as the tendency to recycle and minimising energy wastage through the use of energy-efficient devices (Abdulsahib et al., 2019). Individuals with awareness of, and hold a positive attitude towards, consumption of green products will be more likely to attempt to minimise their negative influence on the environment compared to individuals who do not, which translates to green behaviour such as purchasing green products (Chen & Deng, 2016).

In a study by Noor et al. (2020), it was found that postgraduate students from UiTM Shah Alam do not have their online purchase intention influenced by attitude. It may be viewed that online purchases are an inherently risky transaction due to requiring an individual's personal details, such as their full name, credit card details, and home address, among others. Hence, attitude does not seem to have an influence on their purchase intention due to the fact that an individual making an online purchase would have accepted the risks associated with it, regardless of their positive or negative attitude towards online purchases. Furthermore, this result is similar to past research by Lim et al. (2015) and Trisna and Sefnedi (2018), which likewise examined the effect of factors of TPB on online purchases by public university students in Malaysia and postgraduate students in Sumatera, Indonesia, respectively. Thus, in the context of online purchase intentions, consumers with at least a tertiary level of education have shown that attitude does not positively influence their intentions of making online purchases. Hence, this study aims to confirm whether attitude does have a positive influence in the context of green food product purchase intention among millennials in Melaka.

2.3.2 Perceived Behaviour Control

Perceived behaviour control is an individual's perception of the difficulty level when carrying out a certain behaviour (Ajzen, 1991). Whether or not a particular behaviour is easy or difficult to carry out depends on the individual's perceived control over said behaviour. If an individual perceives that they have enough control over a certain behaviour, there is a greater chance that the individual will behave in that manner (Shukla, 2019). Additionally,

an individual who deems that they have no control over a given circumstance may not be motivated to join in (Peña-García et al., 2020). According to Jing et al. (2019), if an individual perceives that they have access to sufficient means and chances, they will behave in a manner more prepared to face obstacles, hence giving them the perception that they have control over their behaviour. Thus, if an individual perceives that they have high control over a behaviour, they are more likely to have a positive attitude towards the behaviour and thus there will be a higher likelihood that they will engage in said behaviour. Conversely, if an individual feels that any action is out of their control, they may feel powerless and uncomfortable and seek to avoid being placed in such a situation again, thus preventing the feeling of helplessness. Hence, it is theorised that, should obstacles or opportunities exist, the former situation may impede an individual's desire to perform a stated behaviour, while the latter situation may enable such desire (Al Mamun et al., 2018).

Perceived behaviour control is considered one of, if not the most important, determinants of purchase intention (Chen & Tung, 2014; Yadav & Pathak, 2016; Wong et al., 2018). Joshi and Rahman (2015) argue that individuals with high levels of perceived behaviour control have expressed greater confidence in becoming green consumers, as they believe that they are in control of their actions and that their decision to purchase and consume green products is wholly their own to make. Furthermore, students who have shown concern for environmental quality are more receptive towards information that may help them learn more about it, such as gaining information about the benefits of green products, and they may also pass on the learned knowledge to other people, thus spreading even more awareness of environmental issues (Al Mamun et al., 2018). There are two kinds of perceived behaviour control: internal and external. Internal perceived behaviour control is

the individual's skill, confidence in their ability, and ability to plan rationally, while external perceived behaviour control includes factors out of the individual's control, such as time or monetary limitations, that may prevent them from acting in a certain manner (Bhutto et al., 2019).

Perceived behaviour control has also been shown to have a positive and significant effect on consumers' purchase intentions for green products (Paul et al., 2016), and consumers who are encouraged to buy green products have greater enthusiasm to spend on purchasing such goods (Biswas, 2016). However, despite consumers being able and willing to buy green products, sometimes they may run into issues that prevent them from doing so, such as prices being too expensive or the product not being available for sale (Barbarossa & Pastore, 2015). These factors may cause an individual to feel that their decision is made out of their control, thus reducing the likelihood of carrying out such behaviour or purchasing green products due to said feeling of weakness.

Much literature on TPB has agreed that perceived behaviour control (PBC) has a significant and positive influence on purchase intention (Abdulsahib et al., 2019; Al Mamun et al., 2018; Paul et al., 2016; Shukla, 2019; Tuwanku et al., 2018; Yadav & Prathak, 2016; Yadav & Pathak, 2017; Yogananda & Nair, 2019). This is due to the fact that when an individual feels that they are in control of their actions, they will be more likely to perform in a certain way. In the context of green food products, if the individual feels that they are pressured by external factors that are out of their control into purchasing green food, they may develop a feeling of helplessness and resentment that their choices are being taken away from them, subsequently causing them to avoid purchasing green food in order to prevent

themselves from falling into the same situation as before. This seems to suggest that PBC has an undeniable positive impact on the purchase intention of green products as a whole. Hence, this study seeks to clarify the influence of PBC on green food product purchase intention among Melaka millennials. However, Choi and Johnson's (2019) study found that perceived behaviour control does not have a significant effect on green purchase intention. It is argued that the respondents of the study are limited to those who have purchased green products previously; thus, such respondents would already have high perceived behaviour control as they are confident in their ability to make green purchases (Choi & Johnson, 2019).

2.3.3 Subjective Norms

Subjective norms are perceived social pressure or the opinions of others that may have an effect on an individual's decision to behave in a certain manner (Ajzen, 1991). It is based on an individual's perception about what sort of behaviour is acceptable, or otherwise, and it is judged by the reward or punishment that may result in the conduct, or not, of said behaviour (Peña-García et al., 2020). Descriptive normative beliefs refer to an individual's perception of what close friends and family members would do in a given situation (Davies et al., 2002), while injunctive normative beliefs are what the individual perceives that others would approve or disapprove of (Arvola et al., 2008). They are formed based on beliefs about what significant others think about the behaviour and the motivation to comply with those opinions. One of Hofstede's (1994) five cultural dimensions includes 'individualism', which refers to the extent to which a person sees themselves as a unique individual or as merely one cog in a group of people sharing similar characteristics. Thus, it can be said that societies that are more collectivistic, such as Asian countries, tend to have higher levels of

customs and behaviours that an individual is expected to conform to as compared to a Western nation like the United States, which places greater emphasis on preserving an individual's unique identity.

Hence, a consumer's perception of the world is highly biased depending on the societal culture that they live in (Peña-García et al., 2020). In a society, an individual may feel pressure to conform to societal beliefs about what kinds of behaviour are acceptable if they are behaving in a contrarian manner (Abdulsahib et al., 2019). Accordingly, it is clear that an individual's social circle can have a significant impact on their decision-making, such as in the context of buying green food products, where seeing friends, family members, or colleagues buying and consuming green food products, as well as believing that doing so will get their approval, would positively influence an individual's green food product purchase intention. Furthermore, subjective norms also function as one of the more common constructs as an antecedent to measure decision-making, as individuals are more predisposed to act a certain way if someone they idolise thinks that they should do so (Schepers & Wetzels, 2007).

These norms are the cultural values shared by an individual's social group and can be a significant encouragement or deterrent to an individual's behaviour based on whether the social group would approve or disapprove of their actions (Han et al., 2010). Cultural values can shape subjective norms through shared beliefs and expectations about appropriate behaviour within a particular culture or society. Thus, the level of individualism has an effect on the level of conformity of an individual living in that society. According to Hofstede

(1994), individualism measures how much a nation's citizens choose to behave as individuals rather than as members of a collective; thus, the antithesis of individualism can be referred to as collectivism. Therefore, in a collectivist society, an individual has greater expectations to conform to societal values, with greater perceived societal pressure being exerted upon those who behave in a 'selfish' manner by focusing only on their 'self' instead of the 'group'. The manner in which members of a social group react can have a profound impact on an individual's decision-making and has been used in some studies to investigate green purchase intention, and subsequently green consumer behaviour (Biswas & Roy, 2015; Paul et al., 2016; Yadav & Prathak, 2016; Yadav & Pathak, 2017; Jaiswal & Kant, 2018). Tarkiainen and Sundqvist's (2005) study on Finnish consumers and their opinions towards organic food found that subjective norms have a positive impact on attitude, which influences their purchase intentions. Hence, it can be implied that subjective norms play an important role in encouraging green consumerism among individuals in a society, and if enough societal pressure exists that exerts on all individuals, it may have a beneficial impact on consumer health further down the line due to a desire to eat healthy and a choice of organic food.

Typically, subjective norms show a positive influence on green purchase intention (Abdulsahib et al., 2019; Al Mamun et al., 2018; Biswas & Roy, 2015; Jaiswal & Kant, 2018; Shukla, 2019; Tuwanku et al., 2018; Yadav & Prathak, 2016; Yadav & Pathak, 2017; Yogananda & Nair, 2019). A majority of these studies were conducted in non-Western countries, such as Malaysia (Al Mamun et al., 2018; Yogananda & Nair, 2019), Iraq (Abdulsahib et al., 2019), Indonesia (Tuwanku et al., 2018), and India (Shukla, 2019; Yadav & Prathak, 2016; Yadav & Pathak, 2017). Based on Hofstede's (1994) cultural dimensions,

Asian countries tend to be more collectivistic when compared to Western countries, which may explain why subjective norms have a significant impact on consumers' purchase intentions towards green products in these regions of the world. Individualistic mindsets are few in collectivistic cultures, as most will comply and fall in line with societal expectations. However, not all studies conducted in an Asian setting have shown subjective norms to be a significant antecedent of green purchase intention, as shown by Paul et al. (2016) and Chaudhary and Bisai (2018), which determined that subjective norms had an insignificant influence on Indian consumers' green purchase intention. Coincidentally, these studies show that the majority of their respondents are highly educated adults, which seems to suggest that the newer generation of consumers is less likely to be peer pressured into conforming to societal beliefs and that they have green product purchase intentions without the need for approval from peers or family members. In addition, Al Mamun et al. (2018) also reported that subjective norms do not significantly impact green product purchase intention among low-income households in coastal Peninsular Malaysia, suggesting that peer pressure from friends or family members is insufficient to drive low-income households to consider purchasing green products. Hence, there seems to be a disagreement about whether Asian consumers are influenced by the thoughts and opinions of their peers or family members and how significant the impact of subjective norms is on green food product purchase intention specifically. Therefore, this study aims to determine whether subjective norms have a positive influence on green food product purchase intention among Melaka millennials.

2.3.4 Environmental concern

An individual is said to be concerned for the environment when they are aware of environmental issues and have the inclination to find solutions in an attempt to solve them (Altin et al., 2014; Dunlap & Jones, 2002; Hu et al., 2010; Karatekin, 2014; Shukla, 2019; Suki, 2016). Furthermore, environmental concern can also refer to an individual's belief, attitude, and level of concern for the environment (Said et al., 2003). Thus, it refers to the level of awareness and interest that individuals and organizations have regarding the impact of human activities on the environment, which includes concern for issues such as climate change, pollution, loss of biodiversity, and resource depletion. Environmental concern is an important concept in the context of sustainable development, as it influences the decisions and actions of individuals and organisations. Wei et al. (2022) elaborate that consumers who purchase environmentally friendly products do so because they believe that such products have a minimal impact on the environment.

Consumers who purchase green products do so out of the belief that by consuming them, it may serve as encouragement for businesses to continue manufacturing them once it is observed that there is a demand for green products (Jiang & Wu, 2022). In that manner, businesses may also show greater environmental concern and publicise their efforts to cater to consumers' sensibilities. Dunlap and Jones (2002) have argued that environmental concern and attitude can be used interchangeably. The degree of environmental concern can also be affected by an individual's country of origin, whereby a person who lives in a developed nation demonstrates greater concern for the environment compared to someone who lives in a developing country (Paul et al., 2016). This implies that only wealthier

consumers with a higher percentage of disposable income would care whether the products they purchase were made with environmentally friendly methods.

Past studies have also shown a positive relationship between individuals that have expressed environmental concern and green purchase intention (Alzubaidi et al., 2020; Koenig-Lewis et al., 2014; Mostafa, 2006; Newton et al., 2015; Paladino & Ng, 2013; Paul et al., 2016; Suki, 2016). Alzubaidi et al. (2020) also claim that environmental concern is one of the key factors in predicting environmentally friendly intentions and is a critical antecedent in determining consumers' green product purchase intentions and subsequently green product purchase behaviour. Hence, individuals who are aware of such issues will show concern for the environment, and they will have a positive opinion towards green products, which is subsequently reflected in their purchase intention where they prefer such items (Abdulsahib et al., 2019; Alzubaidi et al., 2020). Mostafa's (2006) study on Egyptian consumers likewise determined that environmental concern does have a significant positive impact on whether a green product purchase is made, as well as how often such a purchase happens. Laroche et al. (2001) concluded that not only do environmentally conscious consumers show a greater willingness to purchase eco-friendly products, but that they are also willing to pay the higher price associated with green products. Environmental concern also showed a significant positive effect on green purchase intention (Abdulsahib et al., 2019). Tuwanku et al.'s (2018) study on Indonesian millennials showed that respondents with high environmental concern had a significant positive impact on their attitudes, which subsequently had an effect on their green purchase intention. These studies have proved the argument by Laroche et al. (2001) that individuals who have expressed environmental concern believe that purchasing and using green products will help solve environmental

issues. Since green products are typically made with eco-friendly materials or methods, these individuals believe that consumption of green products will reduce their carbon footprint and save the environment.

Yogananda and Nair (2019) found that environmental concern positively influences green food product purchase intention among highly educated adults in Malaysia, and similarly in Saeed et al.'s (2013) study of Pakistani university students' purchase intention of green or sustainably made clothing. Conversely, past research by Thambiah et al. (2015) determined that environmental concern does not have a significant impact on organic food purchase intention among Gen Y university students in Malaysia, which is similar to Smith and Paladino (2010), who showed environmental concern to not be significantly influencing the purchase intention of organic food among Australian households. The contrasting results may be caused by difficulty in measuring environmental concern, as it is highly subjective and based on an individual's perception during that time. Furthermore, Smith and Paladino (2010) also posit that other factors, such as the price of organic food, may come into conflict when determining factors that influence green food product purchase intention. This implies that although a consumer may have expressed environmental concern and have intentions of purchasing green food products, in certain regions of the world, green food products are priced at a premium when compared to conventional food products, and hence this may discourage consumers from buying green food products as they may be limited by their budget. Therefore, this study seeks to clarify whether environmental concerns would have an impact on Malaysian millennials' green food product purchase intentions.

2.3.5 Environmental Knowledge

Environmental knowledge is an individual's knowledge of the environment and includes one's general knowledge of the facts about it and how an individual's behaviour may have an impact on the environment (Biwas & Roy, 2015; Choi & Johnson, 2019; Fryxell & Lo, 2003; Taib et al., 2022). It refers to the understanding of the natural environment, the causes and consequences of environmental problems, and the knowledge required to address these problems. Environmental knowledge is defined as the understanding of the natural environment, including the biological, physical, and chemical processes that occur within it. It also includes knowledge of the causes and consequences of environmental problems, such as climate change, pollution, and loss of biodiversity, that may occur as a result of human activity or lack thereof. Environmental knowledge is essential for understanding the impact of human activities on the environment and for developing solutions to environmental problems. Zhuang et al. (2021) define environmental knowledge as an individual's perceived understanding of general environmental issues. The author also suggests that the more environmental knowledge an individual obtains, the more likely it is that they will have green purchase intentions. Thus, having a certain level of environmental knowledge is crucial during the decision-making process of purchasing green products (Chan, 1999; Mostafa, 2006; Sharma, 2021; Smith & Paladino, 2010). Saeed et al. (2013) found that environmental knowledge and environmental concern were significant predictors of the green purchase intention of Pakistani university students.

Choi and Johnson (2019) found that environmental knowledge had a positive impact on eco-friendly behaviour such as purchasing and using green products. Hence, it can be

implied that individuals with a higher level of environmental knowledge tend to engage in more environmentally friendly behaviour, such as recycling and reducing energy consumption. Environmental knowledge is also positively related to environmental attitudes and values, which, in turn, influence behaviour. Managers in China have reported possessing high levels of environmental knowledge, which is in line with the Chinese government's push for greater regulatory control over businesses in an effort to reduce the large amounts of pollution being generated by unscrupulous business owners (Fryxell and Lo, 2003). However, it was also discovered that Chinese managers sometimes lack the determination to have their businesses engage in environmentally friendly behaviour, possibly due to Chinese culture's view that subordinates should defer to their higher-ups in terms of decision-making (Fryxell & Lo, 2003). Thus, this implies that once managers higher on the organisation's hierarchical chart begin to act in a sustainably conservative way, due to their higher level of authority, it would be easier for their subordinates to fall in line. Furthermore, a paper by Amyx et al. (1994) found that when an individual has high environmental knowledge, they are willing to pay the premium prices typically commanded by green products. Jaiswal and Kant's (2018) study showed a similar result, where environmental knowledge was concluded to have a significant impact on green purchase intentions.

These results contrast with Ahamad and Ariffin's (2018) study, which showed that high environmental knowledge has no significant impact on Malaysian university students' decision to purchase green products. Consequently, when consumers acknowledge having limited knowledge and a lack of understanding about green products and why they are beneficial for the environment, it may cause them to become confused and uncertain about their buying behaviour (Connell, 2010; Young et al., 2010). According to Choi and Johnson

(2019), the inconsistent impact of environmental knowledge on green purchase intention can be attributed to variations in the definition of the term employed by different researchers. Some studies have utilized objective knowledge, which pertains to an individual's understanding of unbiased facts regarding environmental issues, such as their comprehension of fundamental scientific concepts and principles in environmental science (e.g., the carbon cycle, the water cycle, and the causes and consequences of climate change). Conversely, other investigations have employed subjective knowledge, which refers to an individual's perceived knowledge concerning environmental problems, including their familiarity with methods and techniques employed to address such issues (e.g., environmental impact assessment, risk assessment, and pollution control measures).

2.3.6 Green Purchase Intention

When an individual exhibits a certain behaviour, it is because there is a yearning, or intention, to carry out such actions (Ajzen, 1991). Hence, if there is a purchase behaviour occurring, it can be explained by a purchase intention. When an individual makes a resolution to achieve a goal, they will take steps towards achieving said goal, and if that individual does not have the intention or motivation to work towards their goal, they will not succeed (Al Mamun et al., 2018). In the case of the study by Tarkiainen and Sundqvist (2005), it was found that Finnish consumers exhibited a positive relationship between the intention of purchasing organic products and their actual behaviour. A consumer is willing to purchase and consume any product or service currently available to them on the market (Abdulsahib et al., 2019). Green purchase intention refers to the willingness of consumers to purchase products that are environmentally friendly and have a minimal impact on the environment.

This concept is directly related to the broader concept of sustainable consumption, which is defined as the use of goods and services that meet the basic needs of the current generation without compromising the ability of subsequent generations to meet their own needs. Students who have expressed a desire to conserve the environment are also reportedly more willing to engage in green product purchase intentions, and the younger generation of consumers has a greater intention of buying green products as compared to older generations (Al Mamun et al., 2018).

Green purchase intention is an important aspect of sustainable consumption, as it is a key driver of demand for environmentally friendly products. Ambarwati et al. (2020) argue that companies should try to understand the purchase intention of their customer base since it is an important metric with which to measure their market share and how well their products measure up to competitors. A study by Kanchanapibul et al. (2014) showed that consumers between the ages of 18 and 30 have expressed a greater intention to purchase green products than individuals in older age brackets. A study of Taiwanese consumers has shown that 80% of the variance in green purchase behaviour can be explained by purchase intention (Wu & Chen, 2014). Hence, if an individual believes that by purchasing green products, they can make a difference and help save the environment, they will have the intention to do so, which can subsequently be transformed into a purchase behaviour. Choi and Johnson (2019) have explained that purchase intention is a significant predictor of green purchase behaviour, and consumers who have a high level of green purchase intention are more likely to purchase environmentally friendly products, recycle, and engage in other environmentally friendly behaviour.

2.4 Millennials

Millennials are typically born between the years of 1980 to 1999, representing a considerable age range of 23 to 42 years old (Cambridge Dictionary, 2013; Merriam-Webster, 1991). Millennials are a generation that came of age during a time of increasing concern over climate change and environmental issues. As such, they have been exposed to a great deal of information and media coverage about the negative impacts of human activity on the environment, such as air and water pollution, deforestation, and habitat destruction. These young consumers are thus more aware of the effect of uncontrolled consumption on the environment and also know the importance of recycling and minimising waste that can damage the environment (Suki, 2016). A study conducted on American consumers found that millennials are the age group that are most likely to be environmentally responsible, having expressed interest in or bought green products within the past 12 months, and who have also stated that they would support companies that show support for environmental issues (Butler, 2018), echoing past studies of a similar nature that have also shown young millennial consumers to be more environmentally conscious compared to other age groups (Kerret et al., 2016; Shabani et al., 2013; Yorulmaz, 2016; Zahari & Esa, 2019).

2.5 Green Consumerism

Green consumerism is a form of activism where individuals make conscious choices to reduce their environmental impact by choosing eco-friendly products, supporting sustainable companies, and reducing their overall consumption. Green consumerism can be generalised as an individual's desire to adopt environmentally friendly behaviour, or to purchase green products over conventional alternatives (Zahari & Esa, 2019). Green

consumerism is studied in much more depth in developed economies, such as the US and Europe (Bhutto et al., 2019; Pothitou et al., 2016), but has slowly been gaining acceptance in developing countries such as India (Shukla, 2019), South Africa (Dilotsotlhe, 2021), and Malaysia (Tiwari et al., 2011; Tan et al., 2019). Hence, this lack of knowledge can lead to a lack of interest in green products, as consumers may not understand the significance of buying green products over conventional ones. Additionally, consumers may not have access to reliable and accurate information about the environmental impact of different products, which can lead to confusion and indecisiveness. This issue may be compounded further and cause scepticism that green products are that much more beneficial than conventional products and are not just expensive products with a fancy label to command premium pricing. Consumers may, understandably, perceive green labels and certifications as a marketing ploy or a way for companies to charge higher prices. This lack of trust in green labels can lead to consumers avoiding green products altogether, as they may not believe that the products are environmentally friendly or sustainable.

In the Malaysian context, there is some awareness of the importance of protecting the environment, and although some Malaysians are doing their part to preserve the environment by switching to green products, even more feel that spending extra to purchase the same product with a ‘green’ label, also known as green consumerism, is an unsustainable option in the long run, as minimising their spending costs is a more pressing concern than any potential impact on the environment (Al Mamun et al., 2018; Lim et al., 2013). One of the reasons this may be true is that millennials have grown up in an era where environmental issues and climate change are more prominent topics of public discourse. This exposure to environmental issues has led to greater awareness among millennials of the impact of human

activities on the environment. Furthermore, the prevalence of the internet has also caused millennials to be raised in an era where there is greater access to information and education about environmental issues. With the widespread availability of the internet and social media, millennials can access a wide range of information about environmental issues and sustainable consumption. This has led to a greater understanding of the importance of sustainable practices and the potential consequences of unsustainable consumption.

2.6 Green Food Products

Green products are made with the intention of minimising the negative impact of the manufacturing process on the environment (Mishra & Sharma, 2010; Saleki & Seyedsaleki, 2012; Yogananda & Nair, 2019). Hence, in this context, it is not atypical for inputs in the manufacture of green products to have characteristics such as being organically sourced, being made from recyclable or recycled materials, being easily broken down and degraded through biological means, not being reduced into toxic elements that may harm the environment, not being tested on animals, or being wrapped in eco-friendly packaging (Ayub et al., 2020; Mishra & Sharma, 2010; Pothitou et al., 2016; Saleki & Seyedsaleki, 2012; Tan & Mariadass, 2019). Green products can range from all manner of products, from food to home appliances, from electronic gadgets to clothing items, and from vehicles to even buildings (Saleki & Seyedsaleki, 2012). For example, a home appliance such as a refrigerator or an air-conditioning device can be considered 'green' if it is highly efficient and minimises a household's electricity bill while in use, when compared to other appliances of a similar type. Al Mamun et al. (2018) argue that green products are usually made from input materials and packaging that have minimal impact on the environment as compared to similar conventional products. Hence, there are many advantages to using green products, chiefly among them being that green products can help address environmental issues and that businesses may also find it profitable to cater to a large and ever-growing population of health-conscious consumers since the manufacturing of green products can be positioned as a competitive advantage for businesses (Biswas & Roy, 2015). By advertising themselves as such, businesses may attract the attention of consumers who wish to be more environmentally responsible in their lives through the consumption of green products.

Green food products are foods that are safe for human consumption, are made from top-quality materials, are full of nutrients, are ethically sourced, such as taking care of the welfare of animals during the rearing and slaughtering process, and, in the case of plants, are grown while adhering to the principles of sustainable development, such as minimising the use of caustic chemicals and pesticides during the growth stage (Conway, 2019; Saleki & Seyedsaleki, 2012; Tan & Mariadass, 2019). Green food products can also be further classified into organic food, which has much stricter definitions and quality control, and other green food products that do not reach such rigorous standards (Ayub et al., 2020). In order to be classified as organic food, the United States Department of Agriculture (USDA) requires that the food product be manufactured without being contaminated by sewer sludge, be grown without the use of synthetic or chemical fertilisers, is not tainted by the use of toxic pesticides, is not a genetically modified organism (GMO), is not fed hormones or antibiotics as a growth supplement, is not made with the use of artificial ingredients or chemical preservatives, and has not been exposed to radiation (Lim et al., 2014). However, it is difficult to quantify what can or cannot be labelled as 'organic food' as different countries have different jurisdictions, laws, and standards with which to measure and certify a food product as being 'organic' (Saleki & Seyedsaleki, 2012). Thus, even if a food is declared organic in one country, it may lose its status once exported to another country due to a different legal definition of what qualifies as 'organic'.

Organic foods have a stricter and more rigid set of standards to adhere to, such as a complete and total ban on the use of chemical fertilisers, while regular green food products do not need to reach such narrower criteria. Hence, there is a fine line between whether a food product can be classed as 'organic' or merely 'green', but although it simply boils down

to the legal requirement as stated by the word of the law, there is no contention that all green and organic food products are manufactured and processed with thorough consideration of the effects they may have on the environment and the safety and welfare of their consumers (Yogananda & Nair, 2019). One of the most important considerations for consumers when choosing green food products to consume is food safety (Tan & Mariadass, 2019). Intense climate change and weather fluctuations, such as long periods of intense drought followed by torrential downpours that may cause plants to drown, have caused severe uncertainties in the agriculture industry, and farmers have resorted to the use of pesticides and other assorted harmful chemicals such as fungicides or herbicides in an effort to curb pests and diseases from attacking their crops that cause crop failures and low yields once it is time for harvest. Hence, consumers are understandably wary about the amount of chemicals that may have been sprayed onto their food, and food products that are labelled as ‘green’ assure them that chemical use is minimised or virtually non-existent, guaranteeing to consumers that the product is safe for human consumption without adverse side effects (Tan & Mariadass, 2019). This situation may provide some insight into why organic and green food products cost more than conventional food products, despite the fact that little to no pesticides and chemicals are used. Although input costs are lower, crop yield may be insufficient to meet demand due to weather and climate uncertainties, so organically produced food is more expensive due to low supply, in accordance with economics' law of supply and demand, where price increases to offset the lower supply curve and bring the market back to equilibrium.

Malaysia has already recognised the need for a sustainable management system for the environment almost five decades ago with the drafting of the Environmental Quality Act 1974 (Tan et al., 2019), which obligates businesses to minimise and prevent causing harm

to the environment during the conduct of business processes and lists harsh penalties for any business convicted of crimes such as illegal waste disposal and pollution of the air and water caused by factorial effluence. In a bid to encourage citizens to be more environmentally conscious, the Malaysian government has also established the Ministry of Energy, Green Technology, and Water, or Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA) in 2009, to endorse and champion the use of green products in Malaysians' daily lives and to change the concept that green products are merely more expensive versions of conventional products that provide no additional benefit while being comparatively more costly (Biswas & Roy, 2015; Tan et al., 2019).

Furthermore, Tan et al. (2019) have also detailed other government initiatives, such as the Eco-Labelling Scheme certified by the Standards and Industrial Research Institute of Malaysia (SIRIM). Malaysian-made products that fulfil certain green criteria during the manufacturing process and that have been judged and verified by SIRIM QAS International are able to apply for certification for the Eco-Labelling Scheme, which clearly signals to potential consumers that a product has been made adhering to all relevant environmental standards and that use of the product will assure consumers of its reliability and quality (The Edge Market, 2020). Products bearing this mark mean they have been manufactured with sustainable methods, such as an efficient production process with minimal material waste, thus preserving the environment. Materials used are likewise sustainably sourced and safe for human use and consumption.

2.7 Green Consumer Behaviour

Saleki and Seyedsaleki (2012) describe a green consumer as an individual who looks for and prefers products that have had minimal impact on the environment. Atkinson (2015) explains that green consumption signifies the preference of a consumer towards 'green' products and services. Furthermore, it is also shown that a significant positive relationship exists between an individual's level of income, education, and behaviours that are considered 'green' (Bieak Kreidler & Joseph-Mathews, 2009). Thus, it can be implied that more well-to-do citizens, as well as more highly educated citizens, are made aware of the importance of preserving the environment, and hence they would be more inclined towards exhibiting green behaviour, such as purchasing food products that are green or organic. This is because individuals with more disposable income would feel more of an obligation towards saving the environment, and with their more comfortable lifestyle, they are able to afford to pick and buy the comparatively more expensive green products instead of conventional ones. Additionally, individuals with higher education have received knowledge about the negative impact of extensive farming on the environment and are also more willing to buy and consume green products to minimise their carbon footprint. There is a higher correlation between individuals making a green purchase and individuals that have been made aware of environmental issues, as shown in various studies conducted on European consumers, who are both able and willing to pay more for green products if they have been advertised as such (Saleki & Seyedsaleki, 2012).

Furthermore, an individual's decision to purchase green products can be influenced by advertisements through the shaping of their attitudes, perceived behaviour control, and

subjective norms (Dilotsotlhe, 2021; Saleki & Seyedsaleki, 2012; Shukla, 2019; Tan et al., 2019; Tan & Mariadass, 2019). The use of social media as a platform to raise awareness about the benefits of consuming green products is one of the methods that businesses can use to influence consumer behaviour, such as emphasising that green products are healthy and safe for human consumption and that the manufacturing process results in negligible impact on the environment as compared to the manufacture of conventional products. By advertising media to highlight the differences between green and conventional products, businesses would be able to create a distinction in the minds of consumers, especially from the younger generation, who are more environmentally conscious about their buying behaviour. Hence, Saleki and Seyedsaleki (2012) claim that an individual with the ability and willingness to pay more for a green product, together with their showing concern for environmental issues such as pollution, would be able to change their attitudes towards green products, which would translate into green purchase intention and behaviour. Bieak Kreidler and Joseph-Mathews (2009) also reasoned that there is zero correlation between the gender of a consumer and green behaviour, and if presented with a choice between a green product and a conventional product, ceteris paribus, the consumer would lean towards being more environmentally conscious and pick the green product.

2.8 Comparison with Related Theories

The attitude-behaviour-context (ABC) model first introduced by Stern (2000) and Guagnano et al. (1995) posited that attitude is not the sole contributing factor towards explaining green consumerism and that behaviour is influenced by both an individual and their environment. Hence, contextual factors may include influences outside of an individual's control, such as monetary costs or incentives, physical access, institutional and legal concerns, public policy, or influence from an individual's interpersonal relationships, among others. If contextual factors are favourable, even individuals with little to no environmental concern may demonstrate environmentally friendly behaviour (Stern, 2000). Conversely, unfavourable contextual factors may diminish even the strongest adherents of environmentally friendly behaviour due to pressure or difficulty in carrying out such behaviour (Stern, 2000). Hence, it can be said that consumers behave the way that they do in anticipation of being rewarded for it or to gain some sort of benefit from engaging in such behaviour, and that these behaviours are strongly influenced by contextual factors. Stern (2000) also claims that the link between attitude and behaviour is strongest when contextual factors are weak or nonexistent, and vice versa. For example, if an individual has either extremely easy or extremely difficult access to be able to purchase green food products, their decision to purchase green food products is irrelevant. This is because with extremely easy access to green food products, almost all consumers would be able to purchase them, and if access was extremely restricted, then almost no consumers would purchase them regardless. However, if contextual factors were minimised, such as green food products being available to a consumer but requiring a considerable amount of effort to locate them, then the effect on an individual's behaviour would be statistically significant since only those with strong environmentally friendly attitudes would go out of their way to find and purchase them.

However, one limitation of the ABC model is that it may not fully capture the complexity of the factors that influence green food product purchase intention. For example, the model may not account for the role of emotions in shaping behaviour or the impact of marketing and advertising on consumer decision-making. Additionally, the model may not fully consider the impact of external factors such as government regulations and policies on green product purchase intentions.

Bandura's (2001) social cognitive theory (SCT) views individuals as being competent enough to exert control over their own behaviour and, by extension, the external environment. As it is impossible for an individual to have full and complete control over every facet of their life, they would seek to delegate such responsibilities to other parties in hopes that these proxies would act in their best interests (Bandura, 2001). For example, an individual does not have the connections or resources to build a highway extension that reduces travel time and distance as well as traffic congestion; hence, they would seek out and plead their case to a locally elected official, who may then use their sphere of influence to table this suggestion at the next parliamentary meeting and gain approval for building said highway extension. Phipps et al. (2013) used SCT as a basis for their research framework and emphasised that both individual and sociocultural factors, when measured independently or interdependently through various combinations, as well as the consumers' prior environmental behaviour, would be able to predict how they would act in the future with regard to sustainable behaviour. Reciprocal determinism can be seen as an individual's behaviour having an effect on their environment and simultaneously environmental factors also having an effect on the individual's behaviour. That is, in the context of green food products, an individual who expresses a desire to consume green food products will seek out

and purchase it, and they will see advertisements espousing the benefits of consuming green products, giving the individual confidence and justification that they have made the moral decision in regard to saving the environment, thus encouraging them to buy more green food products in the future. However, the SCT model also has some limitations, and it may be too individualistic and not account for the collective and social nature of environmental issues. An individual's behaviour may also be influenced by emotions or their state of mind, and this may cause irrational behaviours. Therefore, TPB may help minimise these effects, as one of the factors is perceived behaviour control, which is how much the individual believes they are capable of controlling what influences their decision-making capabilities.

Motivation-ability-opportunity (MAO) is another model that can be used in understanding consumer behaviour (Joshi & Rahman, 2015). Olander and Thøgersen (1995) used MAO in their study to understand green consumerism, with ability and opportunity functioning as prerequisites that will ultimately affect a consumer's green consumer behaviour. To explain how consumers' environmentally friendly attitude will result in green product purchase behaviour, a consumer must have both the ability and the opportunity to carry out such behaviour (Olander and Thøgersen, 1995). Thus, if green food products are easily available to consumers, it would be relatively simple for consumers to locate and purchase them, thus positively affecting green consumerism. Olander and Thøgersen (1995) describe motivation as a moral responsibility being thrust upon an individual, usually due to external factors such as social norms. In time, the individual may internalise the social norms and transform them into a personal norm. As a result, subjective norms may not have a significant direct impact on environmentally friendly behaviour, as the individual would perceive behaving in an environmentally conscious manner because of their own desire to

do so. Furthermore, Olander and Thøgersen (1995) also cite Schwartz's (1977) altruism model when describing how an individual behaves in an environmentally friendly manner, claiming that humans are less rational when faced with such a situation.

Schwartz (1977) argues that whether an individual fulfils their moral obligation is dependent upon said individual's perception of possible results with regards to solving the issue, as well as how they perceive themselves as having a personal stake in solving the issue. Hence, in such a situation, if an individual feels threatened into conforming with their moral duties, the individual may end up creating mental defences as a coping mechanism to deny possible consequences or reject personal responsibility entirely by claiming that someone else should do it (Schwartz, 1977). Therefore, in the context of green food product purchase intention, if an individual thinks that consuming green food products is a futile endeavour and that environmental issues would persist regardless, they may deny personal accountability and reject switching to green products by justifying their actions as being too insignificant to help save the environment.

The 'ability' construct includes two factors:habit and task knowledge (Joshi & Rahman, 2015). Olander and Thøgersen (1995) argue that carrying out an environmentally friendly behaviour requires a conscious effort on the part of the individual, and until such a time as performing in an eco-friendly manner becomes routine or second nature to the individual, the new habit is not said to have been formed, and it is likely that they would regress back to their prior behaviour, thus overturning the ability of the individual to practice green behaviour. Tsakiridou et al. (2008) found that habits do have a significant and negative

impact on consumers' intentions to purchase green products. This is likely due to the fact that habits are deeply ingrained and subconscious actions that require no cognizant idea to carry out, thus making it easier and less taxing for the individual to carry out their routine of purchasing conventional products without requiring additional effort of looking for and identifying which products are considered 'green' or not. Furthermore, encouraging change in the ability of the individual also requires task knowledge, which is information about how to achieve their goals (Olander and Thøgersen, 1995). In the context of green food product purchase intentions, it is the knowledge about what food products available on the market that are considered 'green', such as eco-labels. Thus, businesses and policymakers should educate consumers and provide information about green food products through the use of advertisements or media campaigns as a way to increase the likelihood of consumers deciding to purchase green food products. Furthermore, an individual also has to have the 'opportunity' or enabling circumstances that allow them to become eco-friendly, and the lack of such situations may end up discouraging them from such behaviour in the future (Olander and Thøgersen, 1995). Hence, if a consumer wishes to purchase green food products but is not able to do so due to situations such as product unavailability (Young et al., 2010) or having to travel long distances, the consumer may feel less inclined and have lower intentions to purchase green food products on the next trip to buy groceries. However, the MAO model also has some limitations. One critique is that it may oversimplify the complex factors that influence behaviour and fail to account for the role of emotions in determining an individual's decision-making capabilities. This limitation can be overcome by using the TPB model, as one of the factors is perceived behaviour control, which can help determine how well an individual views themselves as being in control of their decision-making skills.

2.9 Conceptual Framework

The theoretical framework first put forth by Ajzen (1991) served as the foundation for the conceptual framework for this study, which is an adaptation of Shukla's (2019) study. Based on Ajzen's (1991) Theory of Planned Behaviour, the extended theory shows the variables of attitude, perceived behaviour control, subjective norm, environmental concern, and environmental knowledge as independent variables, while green food product purchase intention is the dependent variable.

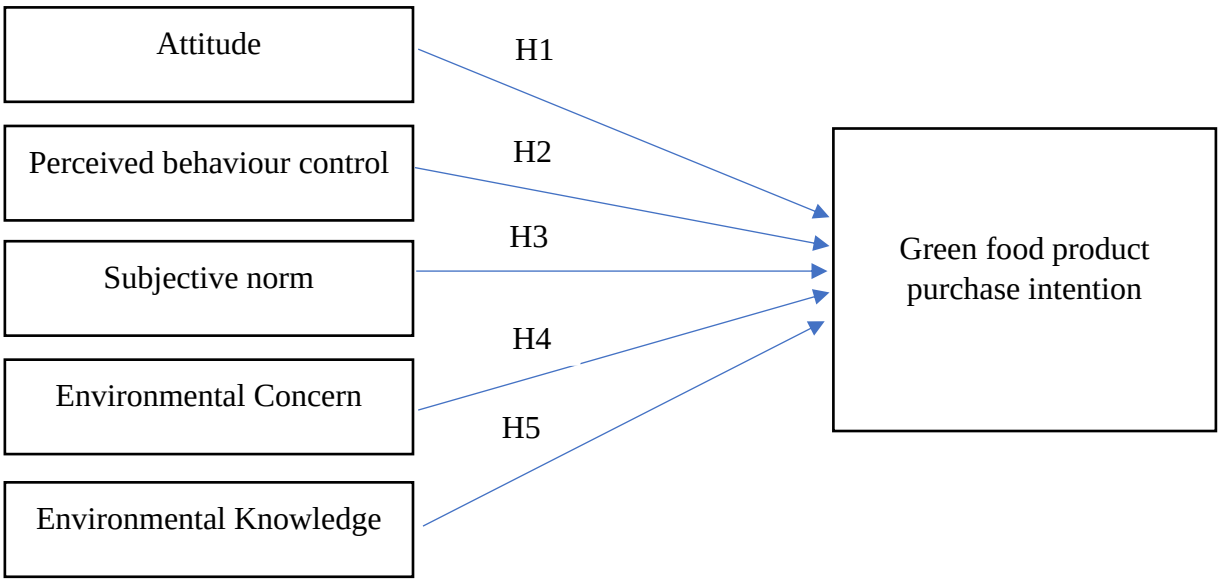

Figure 1.1. Conceptual Framework of the Extended Theory of Planned Behaviour on Green Food Product Purchase Intention Adapted from Shukla (2019)

Ajzen (1991) developed the Theory of Planned Behaviour (TPB) as a way to predict human behaviour and has been extensively used in many studies to determine consumers' purchase intentions (Abdulsahib et al., 2019; Ali et al., 2011; Bhutto et al., 2019; Sreen et al., 2018; Tuwanku et al., 2018; Yadav & Pathak, 2016). There are also some variations to the TPB constructs used in other studies (Choi & Johnson, 2019; Kim & Chung, 2011; Paul et al., 2016; Shukla, 2019; Yadav & Pathak, 2016) that have either added additional

contextual constructs, such as environmental concern or environmental knowledge, or modified certain paths in an attempt to improve the predictive ability of consumers' purchase intention. Hence, this study proposes that environmental concern and environmental knowledge also have an effect on millennials' green purchase intentions.

2.10 Hypothesis Development

2.10.1 Hypothesis 1

Han et al. (2010) determined that attitude has a positive influence on whether a customer chooses to stay at green hotels during their holidays. Additionally, in the case of Tuwanku et al. (2018), it was concluded that Indonesian university undergraduates who expressed a positive attitude towards green packaging would also have higher purchase intentions. Thus, this study aims to confirm the following hypothesis:

H_1: Attitude has a positive effect on green purchase intention.

2.10.2 Hypothesis 2

Joshi and Rahman (2015) concluded that individuals who proclaim themselves to have high levels of perceived behaviour control are more likely to convert into consumers who would make green purchases. Dilotsotlhe's (2021) study conducted on South African millennials found that consumers expressing positive behaviour control, that is, they are in control of their decision-making abilities, would be more likely to exhibit environmentally friendly behaviour of their own volition. Hence, this study intends to confirm the hypothesis below:

H_2: Perceived behaviour control has a positive effect on purchase intention.

2.10.3 Hypothesis 3

Bhutto et al. (2019) observed that, in the context of Chinese students from a public university in Wuhan, subjective norms do show a significant positive impact on green product purchase intention; however, the relationship is weaker when compared to the students' perceived behaviour control. Therefore, this study attempts to confirm the hypothesis:

H_3: Subjective norms have a positive effect on purchase intention.

2.10.4 Hypothesis 4

Saeed et al.'s (2013) study on the Pakistani clothing industry found that young Pakistani consumers that have shown environmental concern are more willing to purchase clothing that has been made via sustainable methods, if the price is reasonably competitive,

and it displays superior value for money when compared to regular clothing. Additionally, Alzubaidi et al. (2020) claim that environmental concern is crucial in predicting environmentally friendly intentions and is an important factor in determining consumers' green product purchase intentions. Therefore, this study aims to investigate the hypothesis:

H_4: Environmental concern has a positive effect on green purchase intention.

2.10.5 Hypothesis 5

A study by Fryxell and Lo (2003) determined that Chinese managers who have environmental knowledge are more willing to engage in sustainable business practices but may be less confident about showcasing their skill due to the Chinese culture's hierarchical nature, and that underlings are expected to defer to their superiors in cases of decision-making, instead of being looked at as troublemakers for openly defying their boss' decisions. Furthermore, Jaiswal and Kant (2018) also showed that environmental knowledge has a significant impact on green purchase intentions. Therefore, this study aims to confirm the hypothesis:

H_5: Environmental knowledge has a positive impact on green purchase intention.

2.11 A Remark

Chapter 2 has examined the literature review, theories used in the study, and hypothesis development used in this study.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Chapter 3 is a summary of the analysis methods, which are research design, types of data to be collected, population and sampling methods, procedures to collect, compute, and analyse data, the development of questionnaires, reliability and validity testing, and the analysis of data.

3.2 Research Philosophy

According to Saunders et al. (2009), there are generally five main categories of research philosophies: positivism, critical realism, interpretivism, postmodernism, and pragmatism. The foundation for a quantitative research approach is positivism (Kenaphoom, 2021), which holds that data obtained from logical and statistical analyses is the source of all knowledge. This explanation concurs with Park et al.'s (2020) definition of a positivism study, whereby such studies focus on identifying causal or explanatory relationships using quantitative methods. In the context of positivism studies, large sample sizes are the preferred selection due to these studies' emphasis on quantitative attributes and the formation of empirically based results. Hence, it can be inferred that the core guiding values of positivism research lean heavily towards precise experimentation methods, the creation of generalisable inference statements, and findings that are able to be replicated by future researchers in years to come. The proposed research approach for this study uses a quantitative method to collect numerical data from the population, analyse the gathered data using statistical methods, and identify quantifiable relationships that may or may not exist

between the variables. Park et al. (2020) also stress the importance of positivism research in validating past hypotheses that have been formed, that it would still hold up in current scenarios and contexts, and in doing so, helping advance scientific research even further through modernised and up-to-date findings. Furthermore, the philosophy of positivism research is that it seeks to explain and predict future events that may occur in the real world by detecting any causal relationships or patterns that may exist between the different variables or consistencies (Bonache & Festing, 2020). Meanwhile, Alharahsheh and Pius (2020) depict positivism research in a more calculative manner, strictly defining it as research that concentrates on facts and numbers as the purest form of data that has minimal interference from researcher observation and is free from inherent human biases. It is further elaborated that researchers should focus on merely identifying measurable, quantifiable, and observable facts and figures (Alharahsheh & Pius, 2020). Irshaidat (2022) adds that positivist researchers should seek to document and verify pattern-causing behaviour, with the primary strategy being an effort to establish connections that may exist between variables. Hence, this research philosophy is suitable to be used in order to respond to this study's research questions.

3.3 Research Design

A research design is a process that must be carried out when investigating a social or human problem (Creswell, 2017). Simply put, during the conduct of research, a research design is a key element, since a well-structured and properly defined research design can suggest the most suitable framework to be used in the context of said study (Evon et al., 2020). Bloomfield and Fisher (2019) argue thusly that researcher bias and impartiality are

inherent in any study and that research findings may experience an element of bias due to the existence of human nature; hence, a properly outlined research design may help to reduce or even mitigate inherent researcher bias and ensure that the research findings are as impartial and neutral as possible. Research designs can be broadly classified into two major categories: quantitative research and qualitative research. Boeren (2017) explains qualitative research as more open-ended in nature, where respondents are free to respond as they see fit without adhering to a strict set of predetermined questions and answers.

Qualitative research is usually conducted through methods such as face-to-face interviews, focus groups, or simply by the researcher observing the respondents themselves. This amount of freedom may even let researchers gain further insight during the data collection process. Conversely, quantitative research involves investigating the relationship between variables and drawing conclusions to form factual theories (Creswell, 2017). Furthermore, the data collected with quantitative research can be analysed using statistical methods and is most suitable to be used when trying to identify factors that affect a particular outcome (Creswell, 2017). According to Boeren (2017), quantitative research involves data collection methods such as questionnaires or surveys, which is the primary method used in this study, as questionnaires are distributed digitally to potential respondents.

Generally, there are many types of research designs available to be used by researchers, as many as seven types (Elsevier, 2022); however, there are four major research designs: descriptive research, experimental research, correlational research, and explanatory research (Bouchrika, 2023). Descriptive research can be explained as observing the

characteristics of a population in their natural habitat, identifying the problems that exist within that population, or identifying the practical or characteristical variations among different establishments or countries (Siedlecki, 2020). Descriptive studies are performed to study individuals, cases, or situations in their most natural environment (Houser, 2016). No variables are being manipulated during a descriptive study, as the researcher only describes and records the variables as they are being observed. Descriptive research is also called ex-post facto research, as it utilises a wide range of research techniques to explore a specific phenomenon (Ansari et al., 2022). Typically, market trends can be analysed by using longitudinal studies, whereas a study of consumer behaviour during a particular point in time can be investigated using a cross-sectional study (Siedlecki, 2020). Thus, instead of focusing on the 'why', descriptive research is more concerned with answering the questions of 'how' and 'what' of a given situation.

The most commonly used and widest source of data for descriptive research continues to be quantitative data collection methods such as surveys (Mishra & Alok, 2017). This study is considered descriptive research due to the fact that a set of questionnaires with rigid, closed-ended questions is used as a tool to collect survey data from potential respondents. For the purposes of this study, this researcher will use quantitative research. Kabir (2016) elaborates that the data collected in quantitative research can be easily broken down into mathematical form and calculated using statistical methods. Additionally, quantitative research is more suitable for variables that can be handled numerically, such as relationships between variables (Aspers & Corte, 2019). Descriptive analysis is used to identify variables in this study and to collect information from respondents. Responses will be collected in the form of a closed-ended questionnaire, and respondents are required to

rate their responses through a set of predetermined numerical choices. Additionally, this study was conducted to understand how various factors may have an influence on millennials' green food product purchase intentions. Descriptive research is used to identify market conditions and is marked by the formulation of specific hypotheses. Hence, descriptive studies have specific research aims and questions that the researcher wishes to verify (Siedlecki, 2020).

3.4 Population and Sampling

The targeted demographic in this study is millennials living in Malaysia, more specifically those in the state of Melaka. According to the Department of Statistics Malaysia (DOSM), the population of the state of Melaka is approximately 998,400 people, or 3.08% of the population of Malaysia (DOSM, 2022). Through estimation, approximately 50% of the working-class population can be classified as 'millennials', that is, individuals aged between 25 and 40 years old (Subramaniam, 2022). Because these consumers are important to driving the desired change, such as sustainable purchasing, young and educated consumers were chosen for this study. Furthermore, young and educated consumers are better equipped to understand the importance of sustainable consumption as well as have the ability to comprehend environmental issues (Yadav & Pathak, 2017). Another justification is that the newer generation of consumers is slowly becoming the next big segment of the consumer market, and their easy access to a wide pool of knowledge grants them a significant position in shifting consumer behaviour on a large scale (Joshi & Rahman, 2019).

The presence of the internet has greatly increased the popularity of online surveys, due to their incredible ability to reach millions of potential users connected to the internet and the fact that online surveys are budget-friendly alternatives to gathering potential respondents (Lamm & Lamm, 2019). However, one admitted weakness of online surveys is that they are prone to bias due to being a nonprobability sampling method, which typically means only technologically savvy users, such as the younger generation and those living in urban areas with a stable internet connection, would be able to respond to such surveys (Lamm & Lamm, 2019). Hence, one method to overcome such a weakness would be to clearly identify the demographic of interest during the data collection process. This study will use the snowball sampling method to identify respondents. A snowball sampling method is a form of nonprobability sampling where each individual in a population does not have an equal random chance to be selected due to the researcher's subjective methods of selection (Etikan et al., 2016). Snowball sampling is initiated when the researcher randomly selects a few individuals to serve as respondents, and additional respondents are referred to by the initial group, and subsequently, until the desired responses have been deemed sufficient by the researcher (Zikmund et al., 2013). The snowball sampling method is chosen because it is an economical method to quickly obtain large amounts of responses needed for the study.

A sample size can be considered the number of respondents needed to solve a research problem (Casteel & Bridier, 2021). The number of respondents should be enough to form a generalised conclusion from the population while simultaneously preventing any errors or biases may occur (Taderhoost, 2017). A sample size that is too small will be prone to too many errors or researcher bias, thus causing ethical issues due to the conclusion drawn being unscientific, while a sample size that is too large is unnecessary and a waste of the

researcher's time and effort (Andrade, 2020). Hence, a sample size should be statistically calculated with the help of software by inputting the limitations of the study for the researcher to be able to draw inferences that are free from error or bias (Taderhoost, 2017). To achieve this, the formula, also known as Cochran's formula (Cochran, 1963), will be used to obtain the average sample size required for the purpose of this study:

Sample size, $S_0 = \frac{z^2 \, x \, pq}{e^2}$ $\qquad$ $S = \frac{S_0}{1 + \frac{S_0 - 1}{N}}$ $\qquad$ Equation 3.1

Whereby,

S = sample size required

N = population size

Z = value corresponding to confidence level required

p = estimated proportion of population

q = 1 – p

e = margin of error allowed

$S_0 = \frac{(1.96)^2 \, x \, 0.5 \, x \, 0.5}{0.05^2} = 384.16$

$\therefore S = \frac{384.16}{1 + \frac{384.16 - 1}{998{,}400}} = 384.0126 \approx 385$

The proposed acceptable margin of error for this research will be 5%, or 0.05, and the confidence level will be 95%. From this, the rough sample size is determined to be

384.0126, or 385 respondents. Hence, the number will be rounded up to a total of 400 questionnaires, which will be distributed to respondents.

3.5 Data Collection Strategy

For this study, a survey research methodology is used as the primary way to obtain the necessary data from respondents. Survey research allows researchers to obtain a multitude of data from willing participants, such as attitudes and opinions of the subject matter (Allen, 2017). Through a survey, it is relatively simple to obtain quantitative data, as questionnaires can be directly distributed to the sample population. The type of data to be obtained will be primary quantitative data, which can be defined as data that can provide information and evidence regarding a study object (Cerar et al., 2021). This type of data is usually collected directly from first-hand sources, and the most popular methods used to collect primary data are through interviews, self-administered surveys, and field observation by the researcher (Allen, 2017). Online questionnaires will be distributed to the targeted demographic to collect primary data, which will then be inputted into data analysis software to analyse and show relationships between the variables.

Surveys can be generalised into two groups: manual or electronic surveys (Nayak & Narayan, 2019). Furthermore, electronic surveys can be distributed through channels such as computer-administered surveys, e-mail surveys, and web surveys. According to Harun and Husin (2019), 53.6% of Internet users in Malaysia are aged between 20 and 34 years old, which encompasses the population of millennials as defined in this study, which are aged between 23 and 42 years old at the time of writing. Hence, web surveys would be the most

suitable method of soliciting responses from Melaka millennials in a short amount of time; thus, Google Forms is the chosen platform used by this study to disseminate and collect data from respondents. Hence, primary data are sourced from respondents willing to take the time to respond to the questionnaire.

Thus, potential respondents are given a link to the questionnaire and can fill it up in their spare time, thus allowing responses to be collected regardless of time or location. Since this study makes use of the snowball sampling method, friends and family members closer to the researcher are first given links to the Google Form via social media platforms such as WhatsApp, with the request that they forward the link to their friends and family members once they have filled out the questionnaire. A disclaimer will be added to the front page of the survey, limiting potential respondents only to individuals that fit the millennial age group, an age range of 23 to 42 years old at the time of writing. This disclaimer will serve to filter and only obtain suitable respondents before they spend time answering so as to not waste the respondents' time and effort for answering the questionnaire if they do not match the researcher's criteria.

3.5.1 Research Questionnaire

The questionnaire used in this study has been adapted from past studies and consists of the following sections: A sample of the Google Form questionnaire as seen by respondents is also available in Appendix A.

Section A will include demographic details about the respondent, namely age, gender, race, monthly income, marriage status, and level of education, among others.

Section B will gather information about the respondents' opinions on the factors that affect their purchase intention. The variables of attitude, environmental concern, and environmental knowledge are shown in Table 3.1 below. Respondents are required to record their responses on a 5-point Likert scale, with (1) being Strongly Disagree, to (5) being Strongly Agree.

Section C will consist of questions regarding respondents' opinions of their purchase intentions for green products. As in the above section, respondents are also required to gauge their responses on a 5-point Likert scale.

Table 3.1. Questionnaire Construct and Items

Variable		Items	Sources
Attitude (A)	A1	I like the idea of consuming green products.	(Paul et al., 2016; Abdulsahib et al., 2019)
	A2	My life will be better if I consume green products in the near future.	
	A3	I have a positive attitude toward consuming green products.	
	A4	I know that green products are good because it is made with environmentally sustainable methods.	
	A5	I agree that purchasing green products is doing my part to help save the environment.	
Subjective norms (SN)	SN1	People who are important to me would encourage me to consume green products.	(Paul et al., 2016; Abdulsahib et al., 2019)
	SN2	My family thinks that I should consume green products.	
	SN3	My friends advise me to consume green products.	
	SN4	It is important to protect the environment.	
	SN5	Purchasing green products will make a good impression of me.	
Perceived behaviour control (PBC)	PBC1	I choose to purchase green products because it is consistent with my principles.	(Paul et al., 2016; Abdulsahib et al., 2019)
	PBC2	I choose to purchase green products because I can afford to do so.	
	PBC3	It is easy for me to locate and purchase green products whenever I go shopping.	
	PBC4	I can protect the environment by purchasing products that are friendly to the environment.	
	PBC5	I think that my actions will have an impact on the environment.	
Environmental concern	EC1	I care about the environment.	(Kilbourne & Pickett, 2008; Paul et al., 2016)
	EC2	I am willing to lower my consumption to save the environment.	
	EC3	I buy green products because it is made with sustainable methods.	
	EC4	It is important to increase awareness of environmental issues.	
	EC5	I believe in using green products because it can reduce pollution to the environment.	
Environmental knowledge	EK1	I purchase green products because I know about the environmental impact of buying and using them.	(Biswas & Roy, 2014; Liobikienė et al. (2016)
	EK2	I am aware that buying green products can make a difference in saving the environment.	
	EK3	I buy green products that have a label that shows it is eco-friendly.	
	EK4	I will buy green products if it has been officially certified as such.	

Table 3.1. continued

	EK5	I educate myself and gain information about any green products I intend to purchase before I make the purchase.	
Purchase Intention (PI)	PI1	I plan to purchase green products frequently.	(Paul et al., 2016; Abdulsahib et al., 2019)
	PI2	I expect to purchase green products because of the environmental benefits.	
	PI3	I don't mind paying more for green products.	
	PI4	I will choose green products over regular products.	
	PI5	I am interested to continue buying green products.	

3.5.2 Measures

This research relies heavily on the use of a Likert scale to collect respondents' opinions, as the linear scaling makes it easy for the respondents to understand the questions and for the researcher to sort through the data. The 5-point Likert scale is used to judge how much a respondent agrees or disagrees with a statement (Burns & Bush, 2008).

This study uses a 5-point Likert scale to determine respondents' level of agreement with each statement, with 5 being strongly agreeing with the statement, 4 being agreeing with the statement, 3 being neutral about the statement, 2 being disagreeing with the statement, and 1 being strongly disagreeing with the statement.

3.6 Statistical Analyses

This study has used the analytical program SmartPLS 3.0 to compute the data collected from distributed questionnaires. For this study, a structural model test was carried out using tests such as the R^2 test and t-statistic, or bootstrap. Next, the measurement model test was performed, such as the validity test, as well as discriminant validity and convergent validity. The results are discussed further in Chapter 4.

3.6.1 Descriptive Analysis

Descriptive analysis converts raw data into statistical outputs, which are simpler to understand and easier to look through as the data collected is summarised based on common characteristics (Turner & Houle, 2019; Zikmund et al., 2013). Hence, descriptive analysis allows a reader to easily grasp and understand a large amount of data by condensing and summarising it. Descriptive statistics includes many subsections that provide a plethora of measurements, such as variation or central tendency, the latter of which includes the most common measurements like mode, median, and mean. Kaur et al. (2018) describe mean as the sum of all values in a dataset divided by the number of observations. Mishra et al. (2019) define median as the value located in the 'middle' of a dataset when all observations are arranged in either an ascending or descending manner. Simply put, mode is the value that appears the greatest number of times throughout a dataset.

Variation is also a subsection of descriptive statistics and includes measurements such as variance and standard deviation (Allen, 2017). Andrade (2020) describes the standard deviation (SD) as a descriptive statistic that shows the distance between the

observed data and the mean of the data. Hence, a large value of SD means the values are largely distanced from the mean of the data, thus determining that the collected data is scattered and unfocused. For the purposes of this study, descriptive analysis will be used to tabulate the demographic data of respondents, such as age, gender, and level of education, which are either nominal or ordinal data.

3.6.2 Partial least squares structural equation modelling (PLS-SEM)

Partial least squares structural equation modelling (PLS-SEM) is a tool used to project latent variables, which are observable variables and implied variables, onto new spaces to form a linear regression model (Rosipal & Kramer, 2006). Wong (2013) explains that one of the major advantages of structural equation modelling (SEM) is that indiscernible and hard-to-measure latent variables can be studied, and thus it is a tool used by marketers to visualise the relationships that may exist between variables of interest so as to prioritise their efforts and resources to better serve their customers. PLS-SEM is calculated using the SmartPLS program and is a multivariate analysis tool used for estimating path models that have latent constructs with composites (Hair et al., 2019). Partial least squares structural equation modelling (PLS-SEM) is a statistical technique used to analyse the relationships between latent variables in a research model. It is a variant of structural equation modelling (SEM) that is particularly useful for models with a small sample size, non-normal data distributions, or complex relationships between variables. Furthermore, in a structural equation model, there are both inner and outer models; the former identifies the relationship between independent and dependent variables, while the latter makes known the relationship between said variables and their measured indicators (Wong, 2013). Additionally, a variable

is also known as exogenous or endogenous. An exogenous variable has path arrows leading out from it and none leading towards it, while an endogenous variable has at least one path arrow leading into it that represents the effects of other variables on it (Wong, 2013).

PLS-SEM is typically used to examine the variance in the dependent variables and is well-suited for exploratory studies (Teoh et al., 2022). It is used to plot the relationship between variables and is typically used when the number of independent variables outnumbers the number of dependent variables. PLS-SEM is well-suited to handle complex relationships between variables, which is often the case when studying consumer behaviour for green products since there are many factors that may influence consumers' decision-making process. PLS-SEM allows for the inclusion of multiple latent variables that can capture these different factors and their relationships. One of the benefits of using PLS-SEM is that it allows the user to use small datasets (Al Mamun et al., 2020). Conducting research on consumer behaviour for green products can be challenging due to the difficulty in finding a large sample of consumers who have purchased or are interested in purchasing green products. PLS-SEM allows for the inclusion of smaller samples by using the maximum likelihood estimation method.

In evaluating measurement models, Hair et al. (2019) determine that the first step is to check indicator loadings, whose values should ideally be greater than 0.7. The next step, as Hair et al. (2014) suggest, is to determine the composite reliability of the study and ensure there is internal consistency. Values should be higher than 0.7, but even higher values are acceptable as they imply greater reliability (Hair et al., 2019). Then, it is followed up with

evaluating the validity of the study using convergent validity and discriminant validity (Hair et al., 2014). Usually, convergent validity is satisfied if outer loadings have a value exceeding 0.70 and that each construct's average variance extracted (AVE) is greater than 0.50, while discriminant validity can be verified through the use of either the Fornell-Larcker criterion (Fornell & Larcker, 1981) or cross-loading, whereby the loadings of each indicator of each construct are higher compared to the cross-loadings on other constructs (Hair et al., 2014).

Once the assessment of the measurement model is completed to a satisfactory degree, the next step is to estimate the structural model relations and the significance levels of the constructs of the study (Chin, 2010). Firstly, collinearity must be determined so as to not result in biased findings through the use of VIF, the values of which should ideally be close to 3 or lower (Hair et al., 2019). Next, the coefficient of determination, R^2 is used to determine the variance and subsequently the explanatory power of the model (Hair et al., 2019). The value of R^2 will typically fall between 0 and 1. When the R^2 value is closer to 1, this means that there is a strong relationship between the independent variables and dependent variables. Following that, a path coefficient analysis will be conducted to investigate the relationship between latent variables, with values greater than 0 indicating a positive relationship and vice versa, with values less than 0 indicating a negative relationship (Hair et al., 2014). Additionally, t-statistics may be used to determine the significance of the relationship. As a rule of thumb, t-statistics values greater than 1.96 are significant at 5% confidence, while values less than 1.96 show that the relationship between variables is insignificant.

3.6.3 Reliability Analysis

Reliability is an indicator of internal consistency, whereby the measurement is able to consistently return similar results even after many tests (Allen, 2017; Zikmund et al., 2013). A measurement is said to be reliable if it is able to repeatedly reproduce similar results over time (Catalán & Gordon, 2020; Mellinger & Hanson, 2020). The reason for determining reliability is to ensure that any differences that may arise from the use of the instrument are due to the underlying construct, instead of being an error during the calculation and analysis phase of a study (Mellinger & Hanson, 2020). Sürücü and Maslakçı (2020) admit that it would be impossible for all research to yield the same results due to factors such as the time at which the measurement was obtained as well as the sample size used in a study, but that having a strong correlation between the findings of each study is sufficient to determine the reliability of the instrument.

For the purposes of this study, Cronbach's alpha is used to test for reliability. Cronbach's alpha was originally used to test the reliability of measurements in science education studies (Cronbach, 1951). Taber's (2017) meta-analysis of 64 different articles concluded that Cronbach's alpha is the most commonly used tool to determine a study's reliability. The generally accepted threshold for the values of alpha, ranging from 0 to 1, is commonly assumed to be ≥ 0.70 in five instances and >0.70 in three instances (Taber, 2017). Thus, the general rule of thumb is that values approaching 1 infer that the construct being measured is reliable, and vice versa, where values approaching 0 mean the construct is unreliable. Hence, this study will also determine an item as being reliable if the value of the Cronbach alpha meets, or exceeds, the value of 0.70.

3.6.4 Validity Analysis

The ability of a scale to measure and properly represent an underlying construct is known as validity (Mellinger & Hanson, 2020). That is to say, the scale is considered valid if it can measure what it is supposed to measure (Sürücü & Maslakçı, 2020). Mellinger and Hanson (2020) concur with Borsboom (2005) that a test can only be considered valid if and only if it has successfully measured an underlying factor that causes a noticeable change in the dependent outcome. Vu (2021) explains that, in quantitative research, there are many types of validity to be measured, including, but not limited to, internal validity, face validity, content validity, construct validity, and criterion validity. Construct validity is used to determine the correlation between latent variables (Mellinger & Hanson, 2020) and is specifically concerned with the measure of theoretical constructs, such as a concept, an attitude, or a behaviour (Sürücü & Maslakçı, 2020). Therefore, for any research to produce usable findings, convergent validity and discriminant validity should be tested.

Hence, Fornell and Larcker (1981) proposed the use of average variance extracted (AVE) as a method to determine convergent validity and discriminant validity. Convergent validity is used to determine how closely a test or scale is related to another test or scale that measures for the same construct; that is, if a measure for constructs is theoretically supposed to be closely related to each other, is in fact closely related (Sürücü & Maslakçı, 2020). Hence, to prove convergent validity exists, average variance extracted (AVE) values, which must meet the minimum value of 0.5, must simultaneously be less than the composite reliability (CR) values (Sürücü & Maslakçı, 2020). AVE is used to determine the percentage of variation in an item that can be explained by the construct; hence, if AVE<0.5, the

implication is that the item measures more errors than variation. Meanwhile, discriminant validity is used to determine if the items on a scale measure only the factor that they are supposed to and are not able to measure other unrelated factors (Sürücü & Maslakçı, 2020). Hence, constructs that are theoretically not supposed to be related to one another are unrelated to each other.

3.7 Conclusion

Chapter 3 summarised the methodology used in this study. These include the research philosophy, research design, type of data to be collected, methods of collecting the data, the development of questionnaires, validity and reliability analysis through the various statistical methods, as well as the software used to calculate the analyses, which is SmartPLS.

CHAPTER 4

RESULTS

4.1 Introduction

Chapter 4 will document the demographic profiles of respondents, as well as the impact of attitude (A), perceived behaviour control (PBC), subjective norms (SN), environmental concern (EC), and environmental knowledge (EK) on the purchase intention (PI) of millennials towards green food products.

4.2 Descriptive Analysis

A link to the online questionnaire hosted on Google Forms was sent out through an e-mail blast and mass text message through the social media application WhatsApp. The questionnaire had an upfront message describing that only qualified respondents, who are millennials, should respond to the questionnaire. If a respondent does not match the criteria, then they are not obliged to respond to the email or message sent and can ignore it. A total of 400 respondents were obtained through this method, not including 21 responses that were incomplete or unusable due to missing data. Therefore, the response rate was 95.01%, and all completed questionnaires were used in the analysis of this study. The demographic profiles of respondents, such as age, gender, monthly income, and size of household, are shown in Table 4.1 below.

Table 4.1. Demographic Profile of Respondents

Demographic variable	Category	Frequency (f)	Percentage (%, 2 d.p.)
Gender	Male	212	53
	Female	188	47
Ethnicity	Malay	137	34.25
	Chinese	192	48
	Indian	60	15
	Others	11	0.0275
Year of birth (Age)	1981 – 1985 (42 – 38)	112	28
	1986 – 1990 (37 – 33)	79	19.75
	1990 – 1995 (32 – 28)	147	36.75
	1996 – 2000 (27 – 23)	54	13.5
	>2001 (<22)	8	2
Highest level of education	SPM/diploma	100	25
	Bachelor's degree	241	60.25
	Master's degree	55	13.75
	PhD	4	1
Current employment status	Unemployed	31	7.75
	Part-time job	15	3.75
	Full-time job	340	85
	Self-employed	14	3.5
Income level (RM)	<1500	10	2.5
	1501-3000	200	50
	3001-4500	125	31.25
	4501-6000	63	15.75
	>6001	2	0.5
Current marital status	Single	102	25.5
	Married	275	68.75
	Widowed	7	1.75
	Divorced	16	4
Size of household	1	73	18.25
	2 – 3	105	22.25
	4 – 5	180	45
	6+	32	8

Of the 400 respondents, 212 are male (53%), while 188 are female (47%). Hence, more than half of the respondents in the questionnaire are men. Based on ethnicity, 48% of respondents, or 192 respondents, are of Chinese descent, while respondents of Malay and Indiandescent are 34.25% (137 respondents) and 15% (60 respondents), respectively. 11

respondents, making up 2.075% of the total, are members of Malaysia's other smaller minorities.

112 respondents (28%) are aged between 38 and 42 years old; 79 respondents (19.75%) are aged between 33 and 37 years old; and 147 respondents (36.75%) are aged between 28 and 32 years old, representing a majority of respondents. Cumulatively, there are 62 respondents (15.5%) aged 27 years and below, which is the smallest age group.

There are 100 respondents with only an SPM or diploma equivalent level of education, making up a quarter, or 25%, of the total respondents. Hence, there are 300 respondents, or 75% of the total, who have at least a tertiary-level education, with 241 respondents (60.25%) having graduated with a bachelor's degree, 55 respondents (13.75%) having a postgraduate or master's degree, and 4 respondents having a PhD or doctoral degree, representing 1% of respondents.

Only a very small number of respondents are unemployed, with 31 respondents (7.75%) admitting that they are in between jobs and are looking for suitable employment. 15 respondents (3.75%) are working in a part-time manner, while 14 respondents (3.5%) are self-employed. The other 340 respondents (80%) are employees working typical jobs at established companies.

10 respondents (2.5%) have reported less than RM1500 in income. Only 2 respondents (0.5%) reported more than RM6000 in income. A majority of the respondents have an income level between RM1501 and RM3000, with 200 respondents (50%) reporting thusly. At income levels of RM3001-4500 and RM4501-RM6000, there are 125 (31.25%) and 63 (15.75%) respondents, respectively.

More than two-thirds (68.75%) of respondents are in married relationships, while 102 respondents (25.5%) are still single. Individuals who are widowed or divorced have 7 and 16 respondents, respectively, which are 1.75% and 4% of total respondents.

73 respondents (18.25%) only have a household size of one individual, while 105 respondents (22.25%) have 2-3 people in their household. 180 respondents (45%) have a family household of about 4-5 individuals, which is approximately the size of a typical nuclear family, consisting of one two parents and two children, while 32 respondents (8%) have at least 6 individuals living with them.

4.3 Goodness of Measures

Goodness of measures is used to determine if the data obtained can be used to support the hypothesis. It is also used to determine the relationship between an independent variable and a dependent variable.

A confirmatory factor analysis is used to determine the discriminant validity and the construct validity and reliability. Discriminant validity is performed to ensure that the different variables are distinct from one another, while construct validity is needed to find out if the variables used in the model are properly correlated. Construct reliability is carried out to determine whether the measures are consistent with what is being measured.

SmartPLS is the software used in this study to compute these data. Albers (2010) recommends the use of SmartPLS as a statistical tool, partly because of its ability to model latent variables in behavioural research (Höök & Löwgren, 2012). A diagram was constructed below with the aid of the SmartPLS 3.0 software.

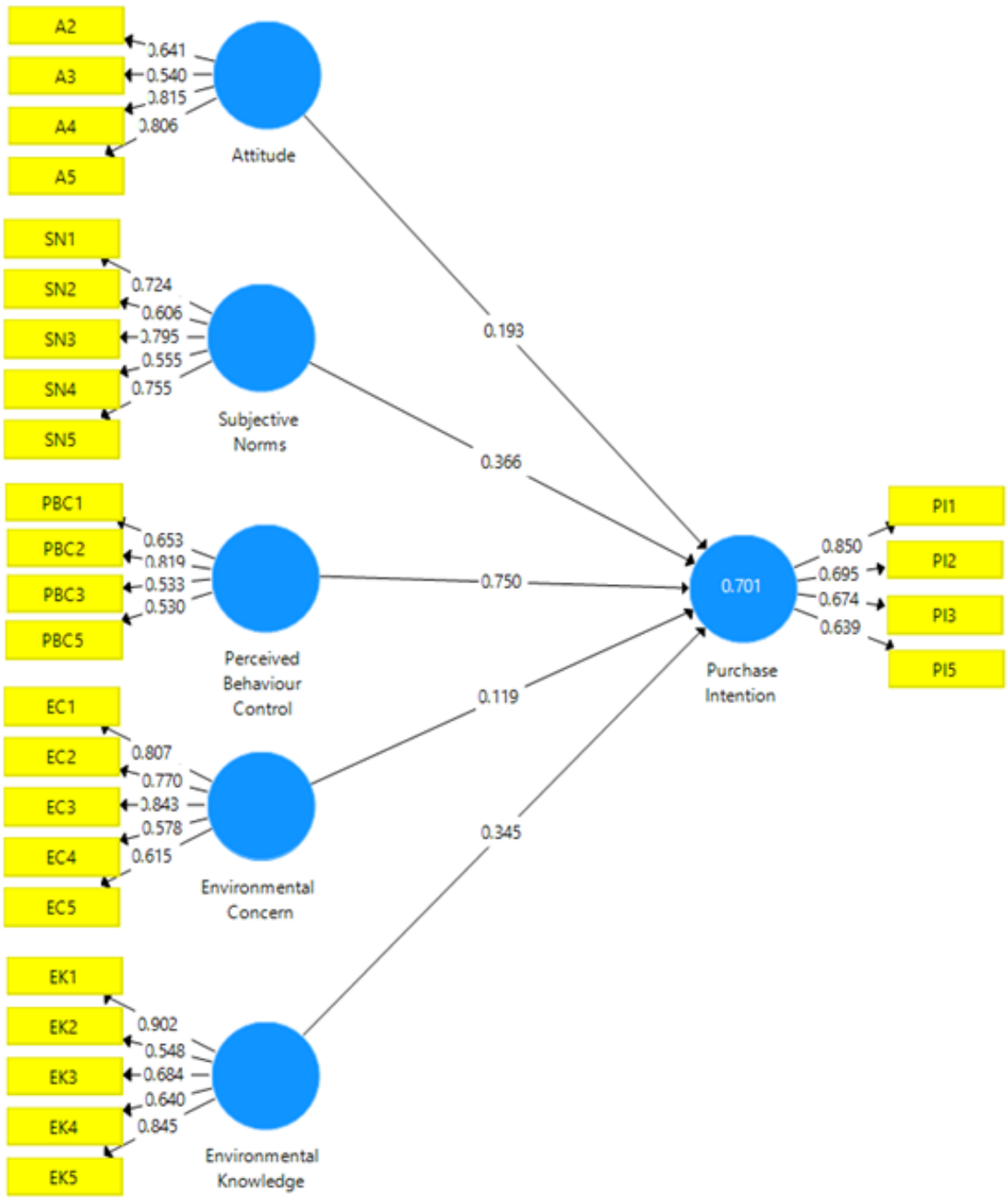

Figure 4.1. Research Model

note: A = attitude; SN = subjective norms; PBC = perceived behaviour control; EC = environmental concern; EK = environmental knowledge; PI = purchase intention.

4.3.1 Loading and Cross-Loading

To find out discriminant validity, each factor should load the highest onto their own factor compared to others and should also be distinctive and uncorrelated. Additionally, cross-loadings were done to find out how strongly each item loads onto other factors (Wetzels et al., 2009).

Table 4.2 shows the loadings and cross-loadings that were computed using SmartPLS. The cut-off value is determined to be 0.5, and these lower loading values were excluded. These items are A1, PBC4, and PI4.

Additionally, each element was also cross-loaded onto other elements. It was suggested that each indicator should be loaded highest on the construct it is intended to measure (Hair, Sarstedt, and Ringle, 2012). Table 4.2 below proves that each variable loaded the most highly onto its intended construct.

Table 4.2. Loading and Cross-Loading

	Attitude	EC	EK	PBC	PI	SN
A2	**0.641**	0.158	0.298	0.427	0.168	0.394
A3	**0.540**	0.166	0.228	0.322	0.142	0.189
A4	**0.815**	0.336	0.251	0.412	0.214	0.232
A5	**0.806**	0.368	0.209	0.435	0.212	0.212
EC1	0.400	**0.807**	0.421	0.620	0.519	0.303
EC2	0.122	**0.770**	0.370	0.371	0.495	0.171
EC3	0.268	**0.843**	0.559	0.562	0.542	0.235
EC4	0.223	**0.578**	0.511	0.411	0.372	0.292
EC5	0.382	**0.615**	0.471	0.477	0.395	0.278
EK1	0.343	0.618	**0.902**	0.568	0.574	0.446
EK2	0.115	0.574	**0.548**	0.334	0.348	0.454
EK3	0.231	0.441	**0.684**	0.520	0.435	0.484
EK4	0.215	0.371	**0.640**	0.479	0.407	0.439
EK5	0.302	0.347	**0.845**	0.497	0.537	0.359
PBC1	0.429	0.441	0.538	**0.653**	0.477	0.569
PBC2	0.381	0.406	0.468	**0.819**	0.599	0.541
PBC3	0.151	0.304	0.183	**0.533**	0.39	0.036
PBC5	0.494	0.630	0.490	**0.530**	0.387	0.298
PI1	0.207	0.517	0.535	0.623	**0.850**	0.179
PI2	0.098	0.461	0.388	0.479	**0.695**	0.071
PI3	0.264	0.401	0.475	0.519	**0.674**	0.232
PI5	0.190	0.468	0.424	0.469	**0.639**	0.263
SN1	0.155	0.212	0.397	0.418	0.184	**0.724**
SN2	0.126	0.147	0.353	0.366	0.154	**0.606**
SN3	0.141	0.221	0.421	0.425	0.202	**0.795**
SN4	0.390	0.318	0.402	0.353	0.141	**0.555**
SN5	0.443	0.303	0.438	0.496	0.192	**0.755**

4.4 Convergent Validity

Confirmatory factor analysis is used to show there is a causal relationship between variables. The validity of the constructs used in this study is measured using convergent validity and discriminant validity. Composite reliability (CR) and average variance extracted (AVE) are both used to identify convergent validity. To investigate whether each construct is distinct from another, discriminant validity is carried out. The minimum recommended CR is 0.3 (Hair et al., 2010), while the recommended AVE is 0.5 (Henseler et al., 2016).

Halawi and McCarthy (2008) suggest that AVE has a minimum threshold of 0.5. From the table, it can be observed that environmental knowledge (EK) has the highest AVE at 0.541, while perceived behaviour control (PBC) has the lowest with only 0.501. Therefore, all variables have at least achieved the minimum value of AVE, and latent variables can account for more than half of the average variance of the elements.

Table 4.3. Convergent Validity

		Factor loading	Composite reliability (CR)	Average variance extracted (AVE)
Attitude	A2	0.641	0.798	0.504
	A3	0.540		
	A4	0.815		
	A5	0.806		
Environmental Concern	EC1	0.807	0.848	0.533
	EC2	0.770		
	EC3	0.843		
	EC4	0.578		
	EC5	0.615		
Environmental Knowledge	EK1	0.902	0.851	0.541
	EK2	0.548		
	EK3	0.684		
	EK4	0.640		
	EK5	0.845		
Perceived Behaviour Control	PBC1	0.653	0.733	0.501
	PBC2	0.819		
	PBC3	0.533		
	PBC5	0.530		
Purchase Intention	PI1	0.850	0.809	0.517
	PI2	0.695		
	PI3	0.674		
	PI5	0.639		
Subjective Norms	SN1	0.724	0.820	0.503
	SN2	0.606		
	SN3	0.795		
	SN4	0.555		
	SN5	0.755		

4.5 Reliability Test

According to Henseler, Hubona, and Ray (2016), the reliability of a PLS construct is determined by the Cronbach's α. It is used to determine the internal consistency of the 27 items across 6 variables, and the value is presented in Table 4.4. Nunnally and Bernstein (1994) suggest that all variables must meet a required minimum alpha value of 0.7, which can be observed from the table. The Cronbach's α for all three variables ranges between 0.724 at the lowest and 0.867 at the highest, showing that the variables measured have high internal consistency and are thus reliable.

Table 4.4. Loading Range

		Cronbach's alpha	Loading range
Attitude	A2	0.792	0.540 – 0.815
	A3		
	A4		
	A5		
Environmental Concern	EC1	0.858	0.615 – 0.843
	EC2		
	EC3		
	EC4		
	EC5		
Environmental Knowledge	EK1	0.867	0.548 – 0.902
	EK2		
	EK3		
	EK4		
	EK5		
Perceived Behaviour Control	PBC1	0.724	0.530 – 0.819
	PBC2		
	PBC3		
	PBC5		
Purchase Intention	PI1	0.809	0.639 – 0.850
	PI2		
	PI3		
	PI5		
Subjective Norms	SN1	0.818	0.555 – 0.795
	SN2		
	SN3		
	SN4		
	SN5		

4.6 Sample mean and t-value

Table 4.5 presents the t-value of all variables. The t-value of attitude ranges from 1.938 to 4.678. The t-value of environmental concern is between 8.658 and 24.474. The t-value of environmental knowledge is between 9.971 and 15.630. The t-value of perceived behaviour control ranges between 7.137 and 28.847. The t-value of purchase intention is between 9.720 and 26.999. The t-value of subjective norms ranges from 2.378 to 3.674.

Table 4.5. Sample Mean and t-value

		Sample mean	t-value
Attitude	A2	0.496	1.938
	A3	0.777	4.449
	A4	0.842	4.678
	A5	0.811	4.146
Environmental Concern	EC1	0.811	16.829
	EC2	0.662	8.658
	EC3	0.833	24.474
	EC4	0.837	14.244
	EC5	0.814	12.846
Environmental Knowledge	EK1	0.734	13.317
	EK2	0.774	9.971
	EK3	0.866	15.022
	EK4	0.835	13.450
	EK5	0.788	15.630
Perceived Behaviour Control	PBC1	0.824	19.937
	PBC2	0.840	28.847
	PBC3	0.616	7.137
	PBC5	0.649	7.555
Purchase intention	PI1	0.832	26.999
	PI2	0.802	18.915
	PI3	0.800	16.600
	PI5	0.740	9.720
Subjective Norms	SN1	0.784	3.578
	SN2	0.792	3.674
	SN3	0.781	3.611
	SN4	0.521	2.378
	SN5	0.611	2.849

4.7 Discriminant validity.

Table 4.6. Discriminant Validity

	A	EC	EK	PBC	PI	SN
A	**0.710**					
EC	0.378	**0.730**				
EK	0.341	0.630	**0.735**			
PBC	0.562	0.672	0.657	**0.731**		
PI	0.263	0.643	0.636	0.645	**0.719**	
SN	0.354	0.343	0.579	0.597	0.255	**0.693**

note: A = attitude; SN = subjective norms; PBC = perceived behaviour control; EC = environmental concern; EK = environmental knowledge; PI = purchase intention.

The table above shows that the square root of each construct's average variance extracted (AVE) is higher than the correlation each has with another different construct and indeed loads the highest onto its own construct. Therefore, the discriminant validity of this study is acceptable.

4.8 Structural Model Results

4.8.1 Bootstrapping

Bootstrapping is a nonparametric method to approximate the accuracy of SmartPLS estimates. It is used in confirmatory factor analyses to ascertain if the data are consistent (Henseler, Hubona, & Ray, 2016). In this paper, t-values for each hypothesised relationship are obtained by bootstrapping. SmartPLS can also be used to compute R^2 values (Halawi & McCarthy, 2008). R^2 is used to determine the strength of the relationship between independent and dependent variables. Henseler, Ringle, and Sinkovics (2009) determine that R^2 values of 0.19, 0.33, and 0.67 can be categorised as 'weak', 'moderate', and 'substantial', respectively, where the value can be interpreted as being indicative of the percentage of variation in the dependent variable that can be clarified by the variation of the independent variables (Frey, 2018).

The R^2 is computed to be 0.701, which exceeds the 'substantial' value of 0.67. It can be said that approximately 70.1% of the dependent variable can be explained by the variance of the independent variables.

4.8.2 Collinearity Statistics (Variance Inflation Factor – VIF)

Table 4.7. VIF

	Variance Inflation Factor – VIF
Attitude	1.271
Environmental Concern	1.658
Environmental Knowledge	1.807
Perceived Behaviour Control	1.904
Purchase Intention	-
Subjective Norms	1.462

VIF is used in this study to test for multicollinearity issues. Hair et al. (2014) emphasises that testing for collinearity is a crucial step before a researcher can move on to the assessment of the model, since if high collinearity exists, the resulting findings may be skewed or biased. Senaviratna and Cooray (2019) explain that VIF is used to show how much the variance of the coefficient estimate is being inflated by multicollinearity. VIF values should ideally be less than 3.3 (Diamantopoulos & Siguaw, 2006) in order to avoid issues of collinearity, and Senaviratna and Cooray (2019) argue that VIF values should not be higher than 2.5. Hence, this study has shown that VIF values for all variables are lower than 2.5, thus proving that there is no concern for multicollinearity.

4.9 Goodness-of-Fit

Goodness-of-fit (GoF) should be where the assessment of the model starts (Henseler, Hubona, & Ray, 2016), to serve to validate the model; otherwise, the obtained data and the entire model itself are suspect (Kumar & Banerjee, 2012). R^2 has a recommended baseline value effect of 0.02 for 'small', 0.13 for 'moderate', and 0.26 for 'large', while the recommended baseline values for goodness-of-fit are small = 0.1, medium = 0.26, and large = 0.36 (Wetzels et al., 2009).

Average R^2 = 0.643, average AVE = 0.603

$$\text{GoF} = \sqrt{average\ R^2 \times average\ AVE} \qquad \text{Equation 4.1}$$

$$= \sqrt{0.701 \times 0.517}$$

$$= 0.602$$

The results show a GoF value of 0.602, which exceeds the 'large' recommended baseline value of 0.35. Hence, it can be implied that the model used is accurate.

4.10 Hypothesis Testing

SmartPLS was used to identify and analyse the relationships, if any, between the independent variables of attitude, perceived behaviour control, subjective norms, environmental concern, and environmental knowledge and their effects on green food product purchase intention. Khan et al. (2022) classify the values for path coefficients as 'very high' for $\beta > 1$; 'high' for $\beta = 0.3 – 1$; 'moderate' for $\beta = 0.2 – 0.29$; 'low' for $\beta = 0.1 – 0.19$; and 'negligible' for $\beta = 0.09 – 0.00$. The results of the analysis are presented in the table below.

Table 4.8. Hypothesis Testing

Hypothesis	Relationships	Path coefficient (β)	t-value	p-value	Hypothesis supported?
H_1	positive impact of attitude on green food product purchase intention	0.193	2.865	0.008	Supported
H_2	positive impact of perceived behaviour control on green food product purchase intention	0.750	4.376	0.000	Supported
H_3	positive impact of subjective norms on green food product purchase intention	0.366	1.800	0.065	Not supported
H_4	positive impact of environmental concern on green food product purchase intention	0.119	2.676	0.008	Supported
H_5	positive impact of environmental knowledge on green food product purchase intention	0.345	3.054	0.002	Supported

4.10.1 Relationship between attitude (A) and purchase intention (PI)

Attitude has a positive relationship with purchase intention ($\beta = 0.193$; $t = 2.865$; $p < 0.05$). The t-value is higher than 1.96 at 5% significance. A positive relationship shows that purchase intention will increase the more strongly a person's attitude is towards buying green food products. This finding is similar to past studies that show attitude has a significant impact on whether an individual has the intention of purchasing (Paul et al., 2016; Shukla, 2019; Tuwanku et al., 2018; Yadav & Pathak, 2017). Therefore, the hypothesis below is accepted:

H_1: there is a positive impact of attitude on green food product purchase intention

4.10.2 Relationship between perceived behaviour control (PBC) and purchase intention (PI)

Perceived behaviour control has a positive relationship with purchase intention ($\beta = 0.750$; $t = 4.376$; $p < 0.05$). At the 5% significance level, the t-value of 4.376 exceeds 1.96. Perceived behaviour control has a significant impact on purchase intention, which is similar to past studies (Abdulsahib et al., 2019; Al Mamun et al., 2018; Paul et al., 2016; Shukla, 2019; Tuwanku et al., 2018; Yadav & Pathak, 2017). Therefore, the following hypothesis is accepted:

H_2: there is a positive impact of perceived behaviour control on green food product purchase intention

4.10.3 Relationship between subjective norms (SN) and purchase intention (PI)

Subjective norms do not have a positive relationship with purchase intention (β = 0.366; t = 1.800; $p > 0.05$). At the 5% significance level, the t-value is lower than 1.96. This shows that subjective norms do not have a significant impact on purchase intention, despite having a positive relationship. Hence, subjective norms, such as the opinions of an individual's family and friend circle, do not really impact an individual's purchase intention for green food products. This finding is contrasted by some past research (Bhutto et al., 2019; Shukla, 2019; Tuwanku et al., 2018), but is similar to other research (Al Mamun et al., 2018; Paul et al., 2016), which shows that subjective norms do not have a significant impact on purchase intention. Hence, the following hypothesis is rejected:

H_3: there is a positive impact of subjective norms on green food product purchase intention

4.10.4 Relationship between environmental concern (EC) and purchase intention (PI)

There is a positive relationship between environmental concern and purchase intention (β = 0.119; t = 2.676; $p < 0.05$). At the 5% significance level, the t-value of 2.676 exceeds 1.96. Environmental concern has a significant impact on green food product purchase intention, echoing a similar result confirmed in past research that determined purchase intention was significantly impacted by an individual's concern for the environment (Abdulsahib et al., 2019; Tuwanku et al., 2018). Hence, the hypothesis below is accepted:

H_4: there is a positive impact of environmental concern on green food product purchase intention

4.10.5 Relationship between environmental knowledge (EK) and purchase intention (PI)

There is a positive relationship between environmental knowledge and purchase intention ($\beta = 0.345$; $t = 3.054$; $p < 0.05$). It is significant at 5% since the t-value of 3.054 is greater than 1.96. This implies that if an individual has greater environmental knowledge, it is more likely that they have the intention to purchase green food products. This result is in line with past studies that show a significant effect of environmental knowledge on purchase intention (Saeed et al., 2013). Hence, the following hypothesis is accepted:

H_5: there is a positive impact of environmental knowledge on green food product purchase intention

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter will discuss the summary of findings, conclusions, and implications that can be drawn from the study. Then, limitations of the study are presented, followed by recommendations for directions for future research.

5.2 Summary of Findings

A significant amount of past research on factors influencing green purchase intention was conducted in countries outside of Malaysia, such as South Africa (Dilotsotlhe, 2021), India (Paul et al., 2016; Saeed et al., 2013; Shukla, 2019), China (Bhutto et al., 2019), and Iraq (Abdulsahib et al., 2019). Studies in Malaysia were likewise limited in scope, as shown in a study conducted on academic staff from Universiti Teknologi Mara in the states of Kedah, Pulau Pinang, and Perlis (Salleh et al., 2010). Another study by Al Mamun et al. (2018) focused on low-income households living along the coastline of Peninsular Malaysia, specifically families that had a reported monthly income of less than RM2000 at the time the study was being conducted.

This study was conducted to examine the effect of the extended theory of planned behaviour (TPB) on the green food product purchase intention of Malaysian millennials', specifically from the state of Melaka. The constructs of environmental knowledge and environmental concern were added to Ajzen's (1991) original TPB, and it can be concluded

that all independent variables in the extended TPB, namely attitude, perceived behaviour control, subjective norms, environmental knowledge, and environmental concern, have a positive relationship with the dependent variable of green food product purchase intention. The results obtained from this study are consistent with past studies that have shown the purchase intention of individuals is positively influenced by the variables of attitude and perceived behaviour control described in the TPB (Abdulsahib et al., 2019; Al Mamun et al., 2018; Bhutto et al., 2019; Dilotsotlhe, 2021; Paul et al., 2016; Shukla, 2019; Tuwanku et al., 2018; Yadav & Pathak, 2016), and extended constructs of environmental knowledge (Al Mamun et al., 2018; Saeed et al., 2013) and environmental concern (Shukla, 2019; Yadav & Pathak, 2016). However, although subjective norms do display a positive effect on millennials green food product purchase intention, they are found to be statistically insignificant at the 5% confidence level. Therefore, only hypotheses H_1, H_2, H_4, and H_5 are accepted.

Table 5.1. Research Questions

	Research Questions	Hypothesis Accepted/Rejected
1	What is the impact of attitude on green food product purchase intentions of millennials?	Accepted
2	What is the effect of perceived behaviour control on green food product purchase intentions of millennials?	Accepted
3	What is the result of subjective norms on green food product purchase intentions of millennials?	Rejected
4	What is the influence of environmental concern on green food product purchase intentions of millennials?	Accepted
5	What is the result of environmental knowledge on green food product purchase intentions of millennials?	Accepted

Research Question 1

Attitude has a significant positive impact on green food product purchase intention. This confirms that in the TPB model, attitude has a statistically significant impact on purchase intention. This suggests that, in Melaka, millennials have a positive attitude towards green food products. Thus, the results of this study are consistent with past research that shows that attitude does positively impact green product purchase intention (Abdulsahib et al., 2019; Paul et al., 2016; Sharma & Dayal, 2016; Shukla, 2019), and confirm Research Question 1, which aims to find out whether there is a positive impact of attitude on green food product purchase intention of millennials. Hence, it can be implied that if Melaka millennials hold positive attitudes towards green food products, there is a high likelihood that they will have the intention to purchase and consume green food products. They believe that purchasing green food products would be beneficial for their health and for the environment, thus increasing the probability that they would consider picking up green food products during a shopping trip. This confirms that in the TPB model, attitude has a statistically significant impact on millennials' green food product purchase intention.

Research Question 2

Furthermore, this study also finds that PBC has a significant and positive impact on millennial green food product purchase intentions. This is evidenced by PBC having the highest path coefficient at 0.750. Therefore, this also proves that in the TPB model, PBC is a significant predictor of purchase intention. This implies that millennials from the state of Melaka are also self-assured of their own behaviour. They are also confident that purchasing green food products will contribute towards saving the environment from further decay, and

they have high intentions of purchasing green food products as they perceive that they are in control of their own behaviour. Hence, these findings accept H_2 and answer Research Question 2, which examines whether perceived behaviour control has a positive influence on the green food product purchase intention of millennials. Melaka millennials are assured of themselves that purchasing green food products is the right thing to do to combat environmental issues and that their decision to do so was not because they were pressured into purchasing green food products by their peers. Conversely, the results of this study also imply that if Melaka millennials do not have the intention of purchasing green food products, they would have justified it to themselves and hence are not easily swayed by the opinions of others.

Research Question 3

However, subjective norms are demonstrated to not have a significant impact on millennials' purchase intention, contrasting with findings of past research that determined subjective norms significantly impact the purchase intention of an individual (Abdulsahib et al., 2019; Bhutto et al., 2019; Biswas & Roy, 2015; Dilotsotlhe, 2021; Salleh et al., 2010; Shukla, 2019; Tang, 2014). However, subjective norms having an insignificant impact on purchase intention have also been concluded in other studies (Al Mamun et al., 2018; Moorthy et al., 2021; Paul et al., 2016; Tarkiainen & Sundqvist, 2005). Even in the original framework, Ajzen (1991) admitted that subjective norms would have the weakest link among the three initial independent variables of attitude, perceived behaviour control, and subjective norms. This shows that subjective norms may not be useful in predicting purchase intention. Hence, it can be seen that Melaka millennials are not easily swayed by the opinions

of close friends and family, and their intention to purchase green food products is instead governed by their own actions. Peers and family members do not significantly impact whether they have the intention to purchase green food products. If they have the intention of doing so, it is self-motivated. Melaka millennials have the intention of purchasing green food products because they believe they have control over their own decision-making abilities. Conversely, this also has the negative implication that millennials who do not have the intention of purchasing green food products will not change their mind despite urging by friends or family members to do so. Due to their high perceived behaviour control and the fact that they have final say in their own decision-making, they may be unwilling to change their view that green food products are merely more expensive variants of conventional food products. These findings indicate that although subjective norms have a positive influence on green food product purchase intention, as hypothesised in Research Question 3, the results are statistically insignificant, and hence H_3 is rejected.

Research Question 4

Individuals that demonstrate high environmental concern are more likely to exhibit green food product purchase intentions, which is in line with several past studies (Cheah & Phau, 2011; Choi & Johnson, 2019; Jaiswal & Kant, 2018; Kai & Haokai, 2016; Mostafa, 2006; Paladino & Ng, 2013; Paul et al., 2016; Suki, 2016). Hence, environmental concern is a statistically significant predictor of green food product purchase intention, and future research may use this as an antecedent factor. This shows that millennials are educated and aware of the impact of their actions on the environment, and that motivates their intention of buying and consuming green food products as a way to save the environment. Hence, to

increase the likelihood of consumers purchasing green food products, it is important for governments and policymakers to push for increasing awareness of the importance of purchasing and consuming green food products. Therefore, hypothesis H_4 is accepted. This study also answers Research Question 4, which seeks to find out whether the green food product purchase intention of millennials is positively influenced by environmental concern. Hence, Melaka millennials that show concern for the environment would be more likely to have intentions of purchasing green food products, compared to individuals that are neutral or apathetic about their role in solving environmental issues. Respondents that have considered themselves to be empathetic are more likely to purchase green food products because they understand the negative effects of human activity on the environment, and through purchasing green food products, they believe that they can contribute towards businesses that have eco-friendly procedures and minimise their carbon footprint.

Research Question 5

The findings of this study show that Melaka millennials are knowledgeable about issues pertaining to the environment and show high levels of worry about the negative impact of human behaviour on the fragile balance of the environment. This finding is in line with several past studies that show respondents who demonstrate knowledge of the environment or have high eco-literacy are more likely to purchase green products in general (Al Mamun et al., 2018; Jing et al., 2019; Saeed et al., 2013). Therefore, environmental knowledge can be considered a factor in determining green food product purchase intention in future studies since it is shown to be statistically significant. Hence, hypothesis H_5 is accepted and manages to answer Research Question 5, which seeks to investigate whether millennials green food

product purchase intention is positively influenced by their environmental knowledge. A majority of the respondents to this study are highly educated, having at least a bachelor's degree, and would thus be familiar with the concepts of green consumerism and know about the importance of saving the environment. It may be due to their lack of awareness of the negative environmental effects of extensive human activity, and this would be an excellent time for businesses and policymakers to inform them of the benefits of purchasing green food products. It is through increasing their knowledge about the subject and letting them empathise with the current environmental issues that they may develop and show concern, thus convincing them to consider switching to green food products as their duty to save the environment.

5.3 Practical Implications

This study has shown that Malaysian millennials' green food product purchase intention is positively influenced by the extended model of TPB. Hence, policymakers and marketing departments of companies that sell green food products can use these findings to design effective marketing strategies that can increase Malaysian millennials' intention to purchase green food products. The factors of attitude and perceived behaviour control in the TPB framework have a positive and significant impact on Malaysian millennials' green food product purchase intention, and thus marketers can design their advertisements that appeal to their attitude of wanting to preserve the environment and reducing carbon footprints. These findings are consistent with Dangelico et al. (2021), which surveyed the opinions of Italian consumers and found that most respondents have positive associations of green products with environmentally friendly practices, such as reduction of pollution. Hsu et al. (2020) argue that by emphasising the health benefits of consuming green food products, companies would be able to increase millennials' purchase intentions. Through methods such as targeted marketing, labels on products, and packaging material, marketers will be able to change the attitudes of their consumers, persuading them that purchasing and consuming green food products is beneficial to their health and the environment (Yun et al., 2018). For example, through the use of labels, marketers can emphasise that their food products are manufactured through sustainable means, such as the use of organic material or the non-use of genetically modified organism (GMO) and packed in recycled or recyclable packaging. In Malaysia, this is done through the use of the Eco-Labelling Scheme by SIRIM. This logo on green food products identifies and distinguishes them from standard conventional products that lack such a symbol and may also serve as a status symbol of

quality assurance to gain consumers' trust. Thus, this may change the attitudes of more consumers and convince them to switch from conventional food products to green variants.

Subjective norms do not show a significant impact on millennials' green food product purchase intention, despite past studies showing the opposite effect (Bhutto et al., 2019; Shukla, 2019; Tuwanku et al., 2018). However, some studies agreed with the findings in this study (Al Mamun et al., 2018; Paul et al., 2016). This implies that millennials are not easily swayed by the opinions of peers or family members, and their intention of purchasing green food products is entirely based on their own attitude and perceived behaviour control; that is, millennials have the intention to purchase green food products because of their belief that doing so is beneficial for their health and the environment and will contribute to reducing their carbon footprint. Hence, despite a lower purchasing power in a post-COVID economy, millennials that still have the intention to purchase and consume green food products are doing so because of their beliefs, and they are willing to spend more money to purchase the relatively more expensive green food products over conventional ones.

Additionally, environmental knowledge and environmental concern both significantly impact Malaysian millennials' green food product purchase intentions. These findings are in line with previous research conducted in other countries, which showed that when consumers share a strong belief that individual effort would make a difference in saving the environment, it is more likely that these consumers would also exhibit green product purchase intentions (Joshi & Rahman, 2019; Mostafa, 2006). As Malaysian millennials are becoming more educated and knowledgeable, it is a reasonable assumption

that they would be sceptical when businesses claim to be environmentally friendly when promoting their products; hence, it is important for these companies to prove that their food products are manufactured through environmentally sustainable methods. Instead of taking businesses at their word, it is likely that millennials would verify the information themselves through online searches. Therefore, policymakers and businesses should create campaigns or advertising promotions through media such as TV or social media that provide information to their viewers on the benefits of buying and consuming green food products or provide the information on official corporate websites. Ensuring that the right information is being presented is important to convince millennials that buying and consuming green food products does have a positive impact on the environment and that they are able to fulfil their moral obligation of protecting the environment by doing so. This gives them confidence that their actions matter and that consuming green food products is ethical.

Millennial consumers that demonstrate environmental concern have higher intentions of purchasing green food products; thus, businesses should focus on environmentally sustainable business practices, such as sustainable farming practices, reducing the use of pesticides and harmful chemical fertilisers, reducing food waste generated during the production process, and switching to eco-friendly packaging material instead of nonbiodegradable plastic. Furthermore, while attempting to attract more millennial consumers, businesses should emphasise points that demonstrate to millennials that their choice of choosing green food products is a step in the right direction towards encouraging and rewarding businesses that have sustainable practices, thus convincing them that their efforts towards environmental protection are bearing fruit. Hence, advertising campaigns that encourage and emphasise consumer responsibility would be more likely to

persuade other millennials to follow as well, as it would strengthen the perception in their minds that their decision to consume green food products would result in minimising harm to the environment and making them feel better about themselves. Furthermore, if a product is unavailable for purchase, consumers would be discouraged from making a purchase, especially in the context of green food products, which are more expensive than conventional products. This is despite the fact that certain segments of the consumer market are able and willing to pay the higher price difference. Hence, it is important for businesses to increase the distribution range of their green products to make it convenient for consumers to find and purchase them.

5.4 Managerial Implications

Malaysian millennials' green food product purchase intention is significantly influenced by attitude and perceived behaviour control. Thus, to increase the likelihood of green food product purchase intention, policymakers and marketers should positively associate buying and consuming green food products with being environmentally conscious, since the more an individual shows concern for the environment, the more likely it is that they have the intention to purchase green food products (Paul et al., 2016; Sharma & Dayal, 2016). Dangelico et al. (2021) suggest that marketers, as well as policymakers, would be able to use the results of the study as a launching point to coordinate marketing campaigns that will reach a wide audience and teach them about the benefits of consuming green products, while also educating them about relevant certifications to look out for, such as eco-labels, that clearly define what is or isn't a green product, which would make consumers' decision-making less confusing and worrisome. Furthermore, the use of advertisements to advocate for the benefits of consuming green products does have a positive impact on young adults' green product purchase intention (Tan & Mariadass, 2019). Through emphasising the health benefits of buying and consuming green food products, businesses will be able to create a positive attitude in millennials that buying green food products is good for the environment. Thus, businesses would be able to cement the concept that consuming green products is good for both environmental and individual health. It is also suggested that businesses expand their reach through advertisements and marketing campaigns conducted on social media platforms instead of only traditional mass media options such as television or radio, as the younger generation of consumers is much more technologically literate and is constantly connected to the internet in one form or another. Furthermore, increasing the availability of green food products in shopping malls, grocery stores, or through online

platforms and e-commerce websites would make it easier for millennials to find and purchase them. One of the barriers that impede higher rates of consumer green product purchase intention is the lack of availability of green products (Dangelico et al., 2021; Young et al., 2010). Consumers who have the intention of buying green products are sometimes met with product unavailability, as not all stores in all locations carry a suitable stock of green products that are available for sale off the shelf, thus requiring consumers to go out of their way to seek and purchase green products, which causes the consumer to feel inconvenienced by the amount of hassle required, subsequently lowering the satisfaction they may experience from consuming a green product. Therefore, these negative emotions may cloud an individual's acceptance of consuming green food products, making them associate consuming green food products with feelings of inconvenience and distraction, negatively impacting any changes to their attitude towards green products. Tarkiainen and Sundqvist (2005) have also concluded that when green products are available and made easily accessible to consumers, there is a positive impact on their purchase intention and behaviour. Hence, by making it more convenient and easily accessible, millennials may be more likely to purchase green food products, and they would feel that they are in control of their behaviour when choosing whether to purchase green food products over conventional ones.

Additionally, businesses should focus on educating millennials about environmental issues related to food production and consumption, such as providing information on sustainable farming practices, the carbon footprint of different food products, and the benefits of choosing green food products over conventional ones. By increasing millennials' environmental knowledge, businesses can help create a more informed and aware consumer base that is more likely to make environmentally conscious purchase decisions. Next,

businesses can align their marketing efforts with millennials' environmental concerns. This could involve emphasising the sustainability and eco-friendliness of their food products, as well as highlighting the environmental initiatives and policies of the company. By demonstrating a commitment to environmental responsibility, businesses can help build trust and loyalty among environmentally conscious millennials. For example, businesses should consider using eco-labels and certifications to signal their commitment to sustainability and environmental responsibility. This can help communicate to consumers that a product has been produced in an environmentally friendly way and may increase the likelihood of purchase among environmentally conscious millennials. As an internet-savvy generation, millennials are more connected to the world through social media. Hence, it is an effective platform to promote green products among millennials. Marketers can leverage social media to raise awareness, educate, and engage millennials about the environmental benefits of green products. This includes using influencers, user-generated content, and social media campaigns to create a sense of community and encourage millennials to share their experiences with purchasing and consuming green food products (Yun et al., 2018).

Furthermore, just as businesses can influence their consumer market through the use of advertising and marketing campaigns, the effect also swings in the opposite direction, and consumers may also exert pressure on businesses. For example, consumers may resort to organising protests or calls for boycotts of a business if they are made aware that the business has been engaging in unethical practices, such as dumping effluent into the rivers. As a consequence, millennials who are slowly becoming more environmentally conscious are also becoming aware of the social pressure they have to force businesses to behave in an ethical manner that does not pollute the environment.

5.5 Limitations of the Study

There are several limitations throughout this study. Firstly, the respondent pool of this study is only confined to millennials living in the state of Melaka and might not be representative of millennials throughout Malaysia. Hence, it is difficult to generalise the findings as encompassing the opinions of all Malaysian millennials since the respondents are not well represented. This study also employs convenience sampling due to time and monetary restrictions over the course of the study and may be subject to researcher bias. A larger pool of respondents from other states may provide a better and more accurate finding on green food product purchase intentions.

Secondly, this study only extends the TPB framework with two additional independent variables: environmental knowledge and environmental concern. There may be other factors that influence millennials' green food product purchase intention, such as the price of green food products (Abdulsahib et al., 2019) or product quality (O'Mahony, 2017). Hence, future studies should seek to extend the TPB framework with even more potential factors or mediating and moderating variables to obtain a more complete response.

5.6 Recommendations

Based on the above limitations, it can be assumed that a better research method and more in-depth studies need to be conducted after overcoming said limitations. A larger respondent pool from respondents living in other Malaysian states should be included during the data collection section in order to better represent the opinion of Malaysian millennials' green food product purchase intention as a whole. Getting a more diverse pool of respondents is important to account for variations in opinions and to obtain results that can be generalised, which will help policymakers and businesses better understand this consumer segment and tailor advertisements or campaigns to better attract their attention. Extending the TPB framework to include other variables that may explain millennials green food product purchase intentions is also preferable to identify factors that influence their intentions.

Sharma (2021) asserts the fact that consumer behaviour is extremely unpredictable, and although research has constantly been conducted to identify factors that may explain a particular subset of human behaviour, today's conclusions may already be obsolete tomorrow. Hence, studies on consumer behaviour will always remain a relevant research topic for businesses. Additionally, while individual consumer behaviour is very fickle and hard to pin down, industry-level research would be able to generate findings that can be generalised on a large scale through identification of common characteristics shared by consumers, such as their desire to purchase and consume green products (Sharma, 2021). For example, consumers who are environmentally conscious have a preference for green products and would usually choose buying green products over conventional ones with minimal regard for price. Hence, in order to tap into the market of consumers who are more

price-sensitive, businesses selling green products should investigate ways to reduce the price difference in order to capture a larger segment of the market. The findings of this study may be used by businesses to figure out corporate policies and plan strategies to introduce and market green food products to consumers, as well as design advertising and marketing campaigns to retain these environmentally conscious consumers. New businesses looking to enter the green food industry may also use the findings of this research to hone their market penetration strategy.

5.7 Conclusion

This study has contributed to the existing body of knowledge by expanding and updating available information regarding the state of green consumerism among millennials in Malaysia. A majority of the independent variables used in this study have demonstrated significant positive relationships with the dependent variable of green food product purchase intention, which is in line with similar research conducted in the past. Attitude, perceived behaviour control, environmental knowledge, and environmental concern have a positive relationship, while subjective norm does not have a significant impact on millennials' green food product purchase intention. Through investigating the factors that motivate millennials' green food product purchase intention, policymakers can better understand how millennials think and act and thus shape government policies and measures that can help push for greater green consumerism and encourage its citizens to adopt green behaviour. In terms of practical implications, businesses may use the results of this study and change their practices accordingly to align their values with those of millennials, who are more environmentally conscious than before, through methods such as increasing the availability of green food products on the market.

However, several limitations were identified, such as a limited pool of respondents that may not be reflective of the real situation in Malaysia. Therefore, future research directions should include respondents from more states and regions in the country, and the TPB framework can be further extended to identify and investigate more potential factors that may influence millennials' green food product purchase intentions.

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APPENDICES

Appendix A: Survey Questionnaire

Application of Extended Theory of Planned Behaviour on Millennials' Green Food Products Purchase Intention

Dear Sir/Madam, I would like to invite you to participate in a research study entitled "Application
of Extended Theory of Planned Behaviour on Millennials' Green Food Products Purchase Intention", which will serve as partial fulfillment of my DBA study at University Malaysia Sarawak (UNIMAS).

As the respondents of the study are to be limited to Millennials only, if you are not born between the years 1980 - 2000 or later, you may freely ignore this questionnaire. Your participation in this survey is voluntary and you are free to withdraw your participation from this survey at any time. The survey should take approximately 10 minutes to complete.

The following questions are collected only for analysis. Please be assured that all information shall be for academic purpose only. All responses will be recorded anonymously and only the aggregate data will be analysed.

Thank you in advance for spending your time and effort to assist me in my academic endeavors. Your response is highly valued and appreciated.

* Indicates required question

1. Gender *

Mark only one oval.

- Male
- Female

2. Ethnicity *

Mark only one oval.

- Malay
- Chinese
- Indian
- Others

3. Year of Birth *

Mark only one oval.

- 1981-1985
- 1986-1990
- 1991-1995
- 1996-2000
- 2001 and later

4. Highest level of education *

Mark only one oval.

- SPM/Diploma
- Bachelor's Degree
- Master's Degree
- PhD

5. Current employment status *

Mark only one oval.

- Unemployed
- Part time job
- Full time job
- Self employed

6. Monthly income level (RM) *

Mark only one oval.

- No income
- 1500 and below
- 1501-3000
- 3001-4500
- 4501-6000
- 6001 and above

7. Marital Status *

Mark only one oval.

- Single
- Married
- Divorced
- Widowed

8. Size of household *

Mark only one oval.

- 1
- 2-3
- 4-5
- 6+

Part B

This questionnaire may describe your opinions of the factors that affect your green food product purchase intention. Please tick only one (1) box per statement that you think best describes your opinion.

Each statement has a Likert scale ranking of 1 to 5, with:

1 - Strongly Disagree
2 - Disagree
3 - Neutral
4 - Agree
5 - Strongly Agree

(The table may not appear in full on some mobile devices. Please scroll to the left or right to reveal the remaining choices.)

9. Attitude *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
I like the idea of consuming green food products.					
My life will be better if I consume green food products in the near future.					
I have a positive attitude toward consuming green food products.					
I know that green food products are good because it is made with environmentally sustainable methods.					
I agree that purchasing green food products is doing my part to help save the environment.					

10. Subjective Norms *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
People who are important to me would encourage me to consume green food products.					
My family thinks that I should consume green food products.					
My friends advise me to consume green food products.					
It is important to protect the environment.					
Purchasing green food products will make a good impression of me.					

11. Perceived Behaviour Control *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
I choose to purchase green food products because it is consistent with my principles.					
I choose to purchase green food products because I can afford to do so.					
It is easy for me to locate and purchase green food products whenever I go shopping.					
I can protect the environment by purchasing food products that are friendly to the environment.					
I think that my actions of buying green food products will have a					

positive impact on the environment.

12. Environmental Concern *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
I care about the environment.					
I am willing to lower my consumption to save the environment.					
I buy green food products because it is made with sustainable methods.					
It is important to increase awareness of environmental issues.					
I believe in buying and consuming green food products because it can reduce pollution to the environment.					

13. Environmental Knowledge *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
I purchase green food products because I know about the environmental impact of buying and using them.					
I am aware that buying green food products can make a difference in saving the environment.					
I buy green food products that have a label that shows it is eco-friendly.					
I will buy green food products if it has been officially certified as such.					
I educate myself and gain information about any green food products I intend to purchase					

before I make the purchase.

14. Purchase Intention *

Mark only one oval per row.

	1 - Strongly Disagree	2 - Disagree	3 - Neutral	4 - Agree	5 - Strongly Agree
I plan to purchase green food products frequently.					
I expect to purchase green food products because of the environmental benefits.					
I don't mind paying more for green food products.					
I will choose green food products over regular food products.					
I am interested to continue buying green food products.					