# Purchasing Behaviour of Sustainable Apparels Using Theory of Planned Behaviour: A Predictive Approach

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**Abstract**

Sustainability has become a growing trend in the fashion market worldwide, and there is an increasing demand for sustainable apparel by consumers. Fashion retailers need to identify and understand factors that influence consumers' purchase behaviour in the sustainable apparel context. Therefore, this study aims to identify the factors influencing the purchase behaviour of sustainable apparel among Malaysians using an extended Theory of Planned Behaviour. A questionnaire was distributed to 250 respondents through social media with 225 valid responses. Partial Least Square Structural Equation Modelling (PLS-SEM) through the SMARTPLS 3.0 was conducted to analyse the data. It is found that social norm, environmental consciousness, and social media usage have a significant relationship with purchase behaviour of sustainable apparel, while attitude and perceived behavioural control has not. The study contributes to the green marketing scholarship by incorporating environmental consciousness and social media usage to extend the TPB, which provides relevant strategies for the retail apparel stores as well as Malaysian Consumers Associations (FOMCA) to promote sustainable apparel. The conclusion, several strategic implications, and suggestions for future study were offered.

**Keywords:** environmental consciousness, purchase behaviour, social media usage, sustainability, theory of planned behaviour

## 1.0 Introduction

The fashion industry is a multibillion-dollar global enterprise and has become one of the most significant industries in the world (Gazzola *et al*., 2020; Negm, 2019; Salem & Alanadoly, 2020). It is because the

fashion industry has become ‘fast fashion’, which means that clothing and product collections of apparel companies change quickly according to the season (Liang & Mangharam, 2019).

This negatively affects the environment, as the fashion industry is regarded as the second most “unclean” industry after the oil and gas industry due to its speedy production and overconsumption (Rukhaya *et al*., 2021; Salem & Alanadoly, 2020). Dewanto and Belgiawan (2020) revealed that the fashion industry contributed about 10% of the global carbon emissions. There are more than 1,900 chemicals used in clothing production of which 165 chemicals are classified as hazardous to health and to the environment according to the European Union (EU) (Liang & Mangharam, 2019). It is estimated that 73% of the clothes eventually end up in landfills or incinerators, while only 15% are recycled into clothes or downcycled into cleaning cloths or insulation materials (Soyer & Dittrich, 2020).

Furthermore, according to Kloth Data (2019), Malaysians are producing an estimated 2,000 tonnes of textile waste, including other wearable products that eventually end up in landfills (Murugesan, 2020). The after-products from fashion production are ultimately harmful to the environment. It has gained growing interest from researchers as consumers nowadays are perceived to be more conscious of environmental issues (Hassan *et al*., 2022).

Many researchers investigated the social change by looking into various aspects, such as environmental knowledge and consumers’ environmental behaviours (Amoako *et al*., 2020; Chang & Watchravesringkan, 2018; Hassan *et al*., 2022; Maichum *et al*., 2017; Taufique *et al*., 2016). Many consumers’ consumption decisions are greatly affected by these environmental factors. Hence, businesses and organisations must change their production processes to be more sustainable. They also need to do more to promote green products as a means to protect the environment and to respond to the growing environmentally friendly consumerism in the fashion industry (Mandarić *et al*., 2021; Salem & Alanadoly, 2020; Sun & Wang, 2020).

Malaysia has also joined the sustainability bandwagon (Salem & Alanadoly, 2020). The government has stepped up efforts in waste reduction as a way to reach its goal of achieving a sustainable economy for the betterment of the environment and society. A recent report on consumers’ sustainability behaviour across 51 different countries showed that about 90 percent of Malaysians are concerned about environmental issues, yet the majority of them are not willing to change

their buying behaviour (Tan *et al*., 2019). To address this, the Malaysian government introduced several initiatives to promote sustainable behaviour, such as the establishment of the Ministry of Energy, Green Technology, and Water (KeTTHA) in 2009 to endorse green products and encourage consumers to use more environmentally-friendly products (Tan *et al*., 2019).

Another study also reported that there has been an increase in demand for environmentally friendly products within the Malaysian market, which shows the existence of green consumers in Malaysia who are willing to support green consumerism (Al Mamun *et al*., 2018; Hassan *et al*., 2022). However, some studies showed that green purchasing is not a favourable practice among young Malaysian consumers, with the main reason being most Malaysians perceive green or environmentally-friendly products as expensive, and only those with high income could afford them (Sharaf et al., 2015; Sharaf & Perumal, 2018; Tan *et al*., 2019).

Furthermore, there is a lack of studies on the young consumers in Malaysia, specifically on their attitudes and purchase behaviour in the fashion industry (Goh & Abdul Wahid, 2015). Besides, most studies on consumers' environmental purchasing behaviour are based in the Western context as mentioned by Al Mamun *et al*. (2018) and Nguyen *et al*. (2017). Nonetheless, there is a lack of studies in the Asian context as well as developing country context. Malaysia is an Asian developing country and one of the pioneers in promoting environmentally responsible behaviour with goals to be carbon-free by 2020, making it a suitable context to research (Taufique *et al*., 2016).

According to de Lenne and Vandenbosch (2017), Ngem (2019), and Pop *et al*. (2020), purchase intentions for sustainable apparel are supported by media communications. The media influences fashion and public interest, especially with internet penetration, and it allows the public to have an up-close and personal view of the fashion industry itself. Moreover, social media has a crucial role in forming environmental awareness, and it exposes users to various environmentally sustainable messages with online and offline connections between personal and business sectors (Severo *et al.,* 2019). It shows how people are made aware of various environmental problems, thus boosting a user's environmental knowledge and consciousness.

According to Karavasilis *et al*. (2015), young consumers tend to be those who utilise social media greatly and have shown interest and

growing awareness of environmental issues. Thus, they have started adopting a sustainable cultural lifestyle. Despite that, scarce studies are being conducted on the relationship between social media usage with eco-friendly and fashion sustainability behaviours (Salem & Alanadoly, 2020). Nevertheless, there are studies that show a link between social media usage and environmental consciousness, especially in terms of gaining environmental knowledge from social media (Chung *et al*., 2020).

However, consumers may not buy sustainable apparel or green products immediately after receiving information from social media. Objectively, social media and cognitive factors play a role together in affecting sustainable purchasing behaviour. The Theory of Planned Behaviour (TPB) has been used by many scholars to predict and understand cognitive factors regarding green behaviour (Brandão & da Costa, 2021; Dilotsotlhe, 2021; Ko & Jin, 2017; Si *et al*., 2019). Concerning social media, the TPB model can predict that cognitions affect behavioural intention and subsequent behaviour, and these cognitions are affected by media exposures (de Lenne & Vandenbosch, 2017). The model also suggests that the influence of experts and media information are vital in encouraging consumers to be more environmentally responsible (Chang & Watchravesringkan, 2018). In addition, social media can predict young individuals' cognition of certain behaviours (Abbas *et al*., 2019). However, only a little research has been conducted on social media usage in studying sustainable fashion. The studies showed that social media usage illustrates the potential of shaping the consumer's cognitions of the sustainable apparel behaviour (Duffett, 2017; Negm, 2019; Rahim & Jalaladeen, 2016, Zhao *et al*., 2022), which justify the inclusion of social media usage as an additional variable to extend the TPB theory.

Furthermore, the TPB model has been applied to explore green buying behaviour (Amoako *et al*., 2020; Sun & Wang, 2020). This model has been used to study various contexts of sustainability and behaviour, such as food buying behaviours, including the second-hand apparel and textile industry (Mohammad *et al*., 2021; Zahid et al., 2022), hybrid electric vehicles (Tanwir & Hamzah, 2020), and reusable drinking straw (Asmuni *et al*., 2021). The results from those studies have shown strong empirical evidence and support for the application of the TPB model in predicting environmental behaviour (Amoako *et al*., 2020; Dewanto & Belgiawan, 2020; Maichum *et al*., 2016; Saricam & Okur, 2018).

On the contrary, there have been inconsistent findings between various cultural contexts. For instance, a study conducted in Britain and Greece had shown that subjective norms were the significant predictors of intentions to purchase sustainable products for British consumers, while the perceived behavioural control was significant for Greek consumers (Khare & Varshneya, 2017). These studies explained that despite both contexts being Western countries, they both showed different affinities in regard to the TPB model.

It has been confirmed by Lang *et al*. (2019) that consumer purchase behaviour is influenced by culture. According to Rahman and Luomala (2020), researchers believed consumers from individualistic cultures, such as Western countries, purchase green products for self-interest, while collectivistic cultures, such as Asian countries, purchase for others-interest. However, despite researchers classifying sustainable consumption for either individual or collective reasons, such studies have been considered inconsistent, as cultural values differ between individuals even within the same culture (Morren & Grinstein, 2016; Rahman & Luomala, 2020).

Furthermore, according to Jung *et al*. (2021), many studies on the environmental issues are from Western countries, while only a few studies on sustainable issues and behaviour are from Eastern cultures. The cultural differences between the Western and Asian countries reflect different values or beliefs, affecting their consumption behaviours differently (Jung *et al*., 2021; Lang *et al*., 2019).

Since there are few studies on purchasing behaviour in the Asian context, it would be interesting to find out which determinants are a significant predictor of sustainable apparel purchasing behaviour of Malaysian consumers. Therefore, the present study intends to examine the TPB with environmental consciousness and social media usage as additional variables and test it with sustainable apparel purchasing behaviour in the Malaysian setting.

## 2.0 Literature Review

### 2.1 Sustainable Apparel

Sustainable apparel refers to apparel that is made from recycled or organic material, has environmentally-friendly labelling or packaging, is second-hand, or can be worn over long periods (Chang & Watchravesringkan, 2018; Davidavičienė *et al*., 2019).

## 2.2 Underpinning Theory

The TPB was first introduced by Ajzen (1985) and has been widely used in investigating the relationships between intentions and behaviour. The TPB is a conceptual extension of the Theory of Reasoned Action (TRA), developed by Ajzen and Fishbein (1977). The TRA is based on the idea that an individual's behaviour is affected by attitude, described as the extent to which an individual has a favourable or unfavourable evaluation of the behaviour, and subjective norms, defined as the perceived social pressure to perform or not perform a behaviour (Ajzen & Madden, 1986). The TPB extends the TRA with the consideration of an additional variable: perceived behavioural control, defined as the individual's confidence in their ability to carry out a certain behaviour (Ajzen & Madden, 1986).

Research has addressed and deepened issues regarding the psychological aspect in understanding the factors that influence or drive individuals purchasing decisions (Tommasetti *et al*., 2018). The most widespread theoretical model used in behavioural studies is the TPB. With that regard, this study utilised the extended TPB to examine the purchasing behaviour of sustainable apparel.

## 2.3 Relationship Between Attitude and Purchase Behaviour of Sustainable Apparel

Attitude refers to the beliefs about certain behaviour, whether a positive or negative evaluation (Amoako *et al*., 2020; Nguyen *et al*., 2019). When studying purchase behaviour, a common inconsistency is seen between attitude and purchase behaviour, which could be observed in this study, as there are studies that exhibit an attitude-behaviour gap in the context of green purchase behaviour (Perry & Chung, 2016; Terlau & Hirsch, 2015).

However, some studies show attitude as a significant variable in predicting green purchase behaviour (Rahman *et al*., 2020; Sun & Wang, 2020; Zhang *et al*., 2020). The more positive the consumers' attitude toward the green product, the stronger their intention to purchase the product. This also means the more positive their attitude, the more willing they are to purchase green products (Amoako *et al*., 2020; Asmuni *et al*., 2021; Sun & Wang, 2020). Hence, this research hypothesised that:

*H1*. Consumers' attitude is positively related to consumers' purchasing behaviour of sustainable apparel.

## 2.4 Relationship Between Subjective Norms and Purchase Behaviour of Sustainable Apparel

Subjective norms are the beliefs held by an individual where specific individuals, such as family or friends, think they should engage in a behaviour or vice versa (Zhang *et al*., 2020). In another word, it is the social pressure from others that motivates them to behave a certain way (Negm, 2019). According to Sharaf *et al*. (2015), subjective norms can also be understood as an individual sharing their thoughts, values, and beliefs with whomever he/she is communicating with. Researchers have provided evidence that environmentally-friendly behaviour is determined by subjective norms (Augustine *et al*., 2019; Liu *et al*., 2020; Yang *et al*., 2018). Consumers that have bought sustainable apparel are influenced by subjective norms to a greater extent (Nam, Dong, & Lee, 2017; Witek & Kuźniar, 2020). In previous studies, subjective norms were a crucial predictor of environmental behaviour and shows a positive relationship between green product consumption and second-hand clothing purchase (Hassan *et al*., 2022; Nam *et al*., 2017; Rahman *et al*., 2020; Sun & Wang, 2020; Zahid *et al*., 2022). In line with the discussion in the literature, this research hypothesised that:

*H2:* Consumers' subjective norms positively affect their purchasing behaviour of sustainable apparel.

## 2.5 Perceived Behavioural Control and Purchase Behaviour of Sustainable Apparel

Perceived behavioural control is the people's perception of how easy or difficult it is to perform a certain behaviour (Nam *et al*., 2017). Perceived behavioural control includes features like the availability of resources, such as money and time in representing behaviour and consumers' confidence, in carrying out the behaviour (Jalil & Shaharuddin, 2019). This variable explains that consumers are more likely to engage in a behaviour if they have the ability, resources, and confidence in executing that behaviour (Chi *et al*., 2019).

According to Jalil and Shaharuddin (2019), perceived behavioural control showed a positive association with purchase

behaviour towards eco-fashion clothes. Another study found that when consumers consider the price of sustainable goods as too high, they show a lower perceived behavioural control and tend to buy less expensive traditional products instead (Ates, 2020; Chi *et al*., 2019). This is aligned with studies by Sharaf and Perumal (2018) and Tan *et al*. (2019), where consumers may not have an excess income to spend on expensive goods as they earn just enough to sustain themselves.

However, it is argued that global sourcing and mass production have caused consumers to become less concerned with the price of sustainable goods, while other factors, such as product availability and authenticity, play a bigger role in affecting a consumer's perceived behavioural control (Chi *et al*., 20s19). Nonetheless, some studies have proven consumers are likely to engage in sustainable behaviours when they perceive that they can control those external factors (Asmuni *et al*., 2021; Jung *et al*., 2021; Rahman *et al*., 2020; Sun & Wang, 2020). Thus, this research hypothesised that:

*H3*: Consumers' perceived behavioural control positively affects the purchasing behaviour of sustainable apparel.

### 2.6 Environmental Consciousness and Purchase Behaviour of Sustainable Apparel

Environmental consciousness refers to psychological factors that determine an individual's tendency towards pro-environmental behaviours. Consumers that are conscious of the environment are aware of the potential harm that resource usage and consumption have to the environment (Tan *et al*., 2019). It is said that this consciousness comes from an individual's belief, disposition, and concern for the environment, where the growing awareness of sustainable practices contributes to the increased level of environmental consciousness (Tan *et al*., 2019).

According to a conceptual model of environmental consciousness by Shedlovska (2013), there are three dimensions to environmental consciousness: cognitive component, affective component, and active component, where the purpose of the research was to study the relationship between the environmental knowledge obtained through social media and green purchase behaviour (Witek & Kuźniar, 2020).

Knowledge is a crucial aspect of consumers' decision to purchase sustainable products (Maichum *et al*., 2016). This

relationship is said to exist when individuals with environmental knowledge acquired from various sources portray positive attitudes towards the environment, which then contributes to their awareness of environmental issues (Salem & Alanadoly, 2020; Tan *et al*., 2019). With the increase in consumers' ecological awareness and knowledge, the more likely they are to show a strong feeling toward purchasing sustainable products (Maichum *et al*., 2016; Witek & Kuźniar, 2020). This is supported by numerous past studies where the extended TPB model found that environmental concern and knowledge have a significant effect on the purchase intention of green products (Tanwir & Hamzah, 2020; Yadav & Pathak, 2017; Zhang *et al.,* 2020).

Therefore, environmental consciousness could affect consumers' green buying behaviour to be socially responsible toward the environment, which is motivated by the ecological knowledge they possess (Hassan *et al*., 2022; Maichum *et al*., 2017; Sharaf *et al*., 2015; Tan *et al*., 2019;). Based on the discussion, this study hypothesised that:

*H4*: Consumers' environmental consciousness positively affects the purchasing behaviour of sustainable apparel.

### 2.7 Social Media Usage and Purchase Behaviour of Sustainable Apparel

Hamid *et al*. (2017) have shown a significant link between social media usage to increase environmental awareness and the aim of better-communicating sustainability issues. It shows that the usage of social media can actively promote environmental awareness and facilitate psychological and sociological factors that influence sustainable behaviour (Sogari *et al*., 2017; Zhao *et al*., 2022).

Many studies have mentioned the importance of social media in predicting users' attitudes and opinions, which would benefit the businesses in the long run as these businesses introduce and promote their products according to mass/public to gain popularity (Irshad & Ahmad, 2019; Lee & Hong, 2016; Maity & Sandhu, 2020; Salem & Alanadoly, 2020). This has resulted in the emergence of the fashion industry into a widely integrated social networking system. Consumers who use social media extensively are showing increasing awareness of environmental concerns by engaging in ecological practices (Rahim & Jalaladeen, 2016). It is because social media allows information

seeking and sharing to be easily accessed by the public (Musa *et al*., 2015).

However, only limited studies researched the relationship between social media activities with eco-friendly and fashion sustainability behaviours (Salem & Alanadoly, 2020). Nevertheless, studies have indicated a link between usage of social media and environmental knowledge and behaviours, and thus this study hypothesised that:

*H5*: Consumers' social media usage positively affects the purchasing behaviour of sustainable apparel.

## 3.0 Methodology

### 3.1 Research Design

This research used a quantitative approach where a survey was curated and distributed to the respondents. According to Cohen and Manion (1980), quantitative research is defined as social research that employs empirical methods and statements, and is expressed numerically. Moreover, a survey method was used in this study. The survey method allows data collection of a specific group of people from a specific area based on the research problem, allowing the problem to be understood through the numerical data collected (Ahmad, 2019).

### 3.2 Sampling Procedure

This research used purposive sampling. Purposive sampling, also called subjective or selective sampling, is a non-probability sampling method in which non-compliant responses must be omitted (Etikan *et al*., 2016). Hence, for this study, researchers are focusing on the respondents who have experience purchasing sustainable apparel products as well as the candidates who have to use social media platforms to search for sustainable apparel products. The details of the sampling inclusion criteria as illustrated in Table 1. In addition, previous studies show that respondents within the age between 20 and 44 years old have shown a high interest in sustainable and environmental behaviour (Brandão & da Costa, 2021; Hassan *et al*., 2022; Sun & Wang, 2020; Zhao *et al*., 2019), which justify the sample that focused on this range of age group.

Furthermore, based on the notion of Mishal *et al*. (2017), a sample size above 200 is suitable for running a structural equation

modelling (SEM) analysis. In addition, the minimum sample size for this study was calculated based on G*Power software version 3.1.9.6 to get a more confirmed result. According to Memon *et al*. (2020), the power used for business or social science research is 0.8. Hence, this particular research used 0.8 as the power, with an effect size of 0.15 and five (5) predictors. Based on the result, the minimum sample size required for this study is 92, but the current study has 225 valid respondents, which is deemed sufficient and meets the requirements to run statistical analysis.

Table 1 : Sampling Inclusion Criteria

| Inclusion Criteria | Explanation |
|---|---|
| 1. Respondents aged between 20 and 44 years old | High environmental awareness and knowledge, result in a high level of environmental consciousness (Tan *et al*., 2019; Žurga *et al*., 2015). |
| 2. Respondents are social media users | Environmental knowledge is a sub-dimension of environmental consciousness. Environmental knowledge is obtained through social media, especially concerning young adult consumers (Sogari *et al*., 2017; Severo *et al*., 2019). |
| 3. Respondents are purchasers of sustainable apparel | To examine the relationship between the determinants and purchase behaviour of sustainable apparel, the respondents must be a consumer of sustainable apparel (Dewanto & Belgiawan, 2020; Witek & Kuz´niar, 2020). |

## 3.3 Measurement

The instrument for this research consists of five sections. Section A contained all the demographic questions needed, such as gender, race, age, education level, and income as well as a screening question “Do you or have you bought any sustainable apparel before?” which will assist in filtering out the invalid responses. Section B comprises questions on social media usage, where the items were adopted from numerous past studies (Salem & Alanadoly, 2020; Salim *et al*., 2020; Severo *et al*., 2019). Section C includes the items on the TPB variables, which consisted of attitude, subjective norm, and perceived behavioural control that was adapted from Al Mamun *et al*. (2018), Jalil and Shaharuddin (2019), Maichum *et al*. (2017), Nguyen *et al. (*2019), Sun and Wang (2020), Ting *et al*. (2019), and Zhang *et al*. (2020).

Section D encompasses four questions on environmental consciousness and the adapted items from (Maichum *et al*., 2017; Rausch & Kopplin, 2021; Uddin & Khan, 2016). Section E comprises items on the consumers purchasing behaviour of sustainable apparel where the items were adapted from (Jalil & Shaharuddin, 2019; Joshi & Rahman, 2016; Khare & Varshneya, 2017; Nguyen *et al*., 2017). A definition and description of sustainable apparel were provided before turning into Section B to inform the participants of the meaning of sustainable apparel, so they could respond more precisely. All variables were measured using a five-point Likert-type agreement scale, with 1 indicating strong disagreement and 5 indicating strong agreement). The details of the measurement can be referred in Appendix A.

### 3.4 Data Collection Procedures

Researchers distributed the survey through Google forms and shared the link through various social media platforms, such as Instagram and Facebook, to solicit the responses. The data was collected from 20 March 2021 to 7 April 2021. The researchers assured the confidentiality of their information.

### 3.5 Common Method Bias

According to Podsakoff *et al*. (2003), the common method bias (CMB) presence in the study has to be detected first before examining the measurement to prevent any bias. To detect any bias, this study utilised Harman's single factor test, which stated that if the variance is less than 50%, it indicates no CMB issue. In this study, it is indicated that the percentage of variance is 38.976%, which shows no presence of data bias since the percentage is less than 50%. In addition, the correlation matrix procedure was used as another statistical remedy to detect CMB (Bagozzi *et al*.,1991; Tehseen *et al*., 2017). CMB occurs when there is a substantially high correlation found among latent variables ($r > 0.9$) (Tehseen *et al*., 2017). The outcome of the correlation test in Table 2 indicated that none of the latent variables correlated more than 0.90. Hence, the results assured that CMB was not an issue in this study.

Table 2 : Correlation Matrix Among the Variables (n = 225)

| Variables | SMU | ATT | SN | PBC | ECN | PB |
|---|---|---|---|---|---|---|
| **SMU** | 1 | | | | | |
| **ATT** | .425** | 1 | | | | |
| **SN** | .398** | .560** | 1 | | | |
| **PBC** | .325** | .508** | .505** | 1 | | |
| **ECN** | .391** | .655** | .505** | .544** | 1 | |
| **PB** | .468** | .594** | .564** | .539** | .714** | 1 |

** Correlation is significant at the 0.01 level (1-tailed).

### 3.6 Data Analysis and Statistical Significance

The *Statistical Package for the Social Science* (SPSS) version 25 and Smart PLS v.3.3.8 software were used for data analysis. Measurement and structural model determination were carried out and the hypotheses were tested using Partial Least Squares Structural Equation Modelling (PLS-SEM) through Smart PLS v.3.3.8. Since this study focuses on testing the theoretical framework from the perspective of prediction and expanding the existing theory, Smart PLS is a suitable choice (Hair *et al*., 2019).

## 4.0 Findings

Table 3 depicts the characteristics of the respondents. More than half of the respondents were female with a percentage of 56.9 of the total respondents, while 43.1% were males. The highest percentage of the respondents belong to the age group of 20 to 24 years old (61.8%), followed by 25 to 29 years old (20.4%), 30 to 34 years old (11.1%), 35 to 39 years old (2.2%), and 40 to 44 years old (4.4%). More than half of the respondents have a Bachelor's Degree (62.2%), followed by a Diploma (17.8%) holder. Other qualifications included Master's Degree (13.3%), Ph.D. (3.6%), and SPM (3.1%), which indicated that the respondents were well educated and could make rational judgments. In terms of monthly income, 89 out of 225 participants earn less than RM1,000 (39.6%), mostly compromising Bachelor's Degree and Diploma holders. 20.4% of the respondents had an income of RM1,001 to RM2,000, followed by 15.1% for RM2,001 to RM3,000 income, 12.9% for RM3,001 to RM4,000 income, and 12.0% for more than RM4,000 income, which shows the respondents have buying power in the market.

Table 3 : Demographics Profile of Respondents (n = 225)

| Variable(s) | | Frequency | Percentage |
|---|---|---|---|
| Gender | Female | 128 | 56.9 |
| | Male | 97 | 43.1 |
| Age | 20–24 | 139 | 61.8 |
| | 25–29 | 46 | 20.4 |
| | 30–34 | 25 | 11.1 |
| | 35–39 | 5 | 2.2 |
| | 40–44 | 10 | 4.4 |
| Ethnicity | Malay | 44 | 19.6 |
| | Chinese | 58 | 25.8 |
| | Indian | 73 | 32.4 |
| | Others | 50 | 22.2 |
| Education | SPM | 7 | 3.1 |
| | Diploma | 40 | 17.8 |
| | Bachelor's Degree | 140 | 62.2 |
| | Master's Degree | 30 | 13.3 |
| | Ph.D | 8 | 3.6 |
| Income | Less than RM1,000 | 89 | 39.6 |
| | RM1,001–RM2,000 | 46 | 20.4 |
| | RM2,001–RM3,000 | 34 | 15.1 |
| | RM3,001–RM4,000 | 29 | 12.9 |
| | More than RM4,000 | 27 | 12.0 |

## 4.1 Measurement Model

Based on Table 4, all constructs had a Cronbach's alpha value beyond 0.70, which indicates that the constructs were internally consistent and reliable (Taber, 2018). Two items, PB1 and SN1 were deleted as their factor loading is less than 0.70.

Convergent validity is demonstrated by the measurement model in Tables 4 and 5. Firstly, the composite reliability (CR) and average variance extracted (AVE), which measures the amount of variance explained by the given construct, should be more than 0.70 and 0.50, respectively (Fornell & Larcker, 1981; Hamid *et al*., 2017). Based on Table 4, this study shows the CR values range from 0.864 to 0.940 and AVE values from 0.630 to 0.838, respectively, showing that all the values exceed the recommended level of 0.70 and 0.50. In addition, the rho_A values should be more than 0.70 as suggested by Dijkstra and Henseler (2015). Hence, the convergent validity was ascertained.

Table 4 : Assessment of Structural Model

| Variables | Items | Loading | Item deleted | Cronbach's alpha | rho_A | CR | AVE |
|---|---|---|---|---|---|---|---|
| Attitude (ATT) | ATT1 | 0.784 | | 0.827 | 0.836 | 0.885 | 0.658 |
| | ATT2 | 0.783 | | | | | |
| | ATT3 | 0.816 | | | | | |
| | ATT4 | 0.860 | | | | | |
| Environmental consciousness (ENC) | ECN1 | 0.739 | | 0.842 | 0.843 | 0.895 | 0.681 |
| | ECN2 | 0.842 | | | | | |
| | ECN3 | 0.849 | | | | | |
| | ECN4 | 0.865 | | | | | |
| Purchase Behaviour (PB) | PB2 | 0.785 | PB1 | 0.763 | 0.769 | 0.864 | 0.679 |
| | PB3 | 0.875 | | | | | |
| | PB4 | 0.809 | | | | | |
| Perceived behavioural control (PBC) | PBC1 | 0.827 | | 0.808 | 0.827 | 0.872 | 0.630 |
| | PBC2 | 0.809 | | | | | |
| | PBC3 | 0.759 | | | | | |
| | PBC4 | 0.779 | | | | | |
| Social media usage (SMU) | SMU2 | 0.891 | | 0.903 | 0.912 | 0.940 | 0.838 |
| | SMU3 | 0.952 | | | | | |
| | SMU4 | 0.902 | | | | | |
| Subjective norms (SN) | SN2 | 0.877 | SN1 | 0.753 | 0.766 | 0.889 | 0.801 |
| | SN3 | 0.913 | | | | | |

Note: CR = Composite reliability; AVE = Average variance extraction

This study utilised the heterotrait-monotrait ratio of correlations (HTMT) to test the discriminant validity. The HTMT value should be below the threshold of 0.90, as suggested by Henseler *et al*. (2015). Based on Table 5, the HTMT values were lower than 0.90. Hence, the discriminant validity was ascertained. In addition, collinearity was examined using the variance inflation factor (VIF) with a threshold value of 3.3 as suggested by Diamantopoulos and Siguaw (2006). Based on Table 6, the VIF values were less than 3.3, indicating the absence of a collinearity issue.

Table 5 : HTMT Ratio

| | ATT | ECN | PB | PCB | SMU | SN |
|---|---|---|---|---|---|---|
| **ATT** | | | | | | |
| **ECN** | 0.792 | | | | | |
| **PB** | 0.661 | 0.851 | | | | |
| **PCB** | 0.635 | 0.661 | 0.546 | | | |
| **SMU** | 0.488 | 0.451 | 0.613 | 0.369 | | |
| **SN** | 0.720 | 0.694 | 0.791 | 0.694 | 0.625 | |

## 4.2 Structural Model

The structural model was tested using the SmartPLS 3.0 software. The model was run using 5,000 bootstrapping samples from the original 225 responses as recommended by Hair *et al*. (2017). There are four main criteria in the structural model need to be evaluated: path coefficient ($\beta$), variance explained ($R^2$), effect size ($f^2$), and predictive relevance ($Q^2$). Table 6 shows the results of the structural model testing.

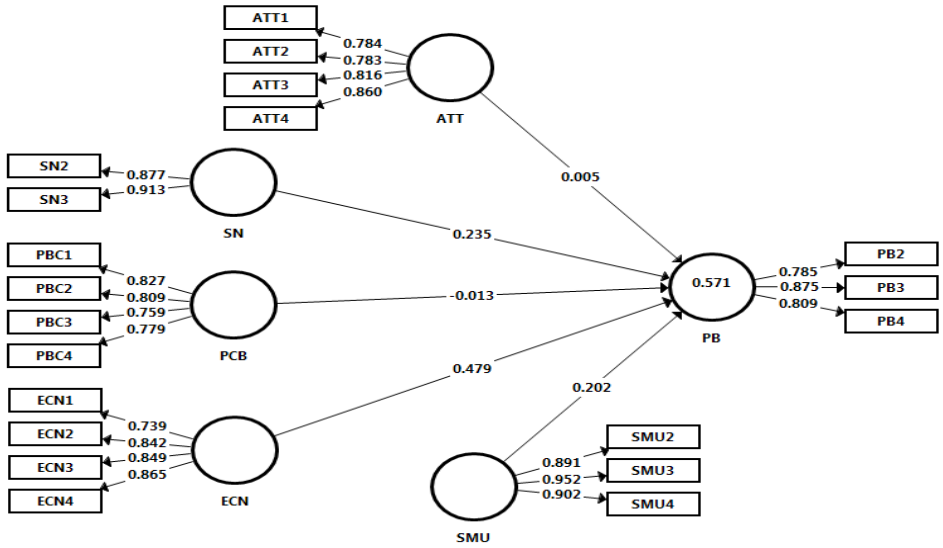


Figure 1 : Structural Model

Table 6 : Structural model result

| Path | Std. Beta | Std. Error | *t*-value | *p* | CI: [LL-UL] | Decision | $R^2$ | $Q^2$ | $f^2$ | VIF |
|---|---|---|---|---|---|---|---|---|---|---|
| H1: ATT -> PB | 0.005 | 0.086 | 0.053 | 0.479 | -0.133-0.151 | NS | 0.571 | 0.372 | 0.000 | 2.056 |
| H2: SN -> PB | 0.235 | 0.068 | 3.439** | 0.000 | 0.128-0.352 | S | | | 0.064 | 2.016 |
| H3: PBC -> PB | -0.013 | 0.065 | 0.204 | 0.419 | -0.126-0.090 | NS | | | 0.000 | 1.686 |
| H4: ENC -> PB | 0.479 | 0.081 | 5.942** | 0.000 | 0.343-0.608 | S | | | 0.261 | 2.050 |
| H5: SMU -> PB | 0.202 | 0.060 | 3.376** | 0.000 | 0.106-0.302 | S | | | 0.067 | 1.422 |

*$p < 0.05$; **$p < 0.001$

NS = Not supported; S = Supported; CI = Confidence interval, LL = Lower level; UL = Upper level

*1-tailed test

The hypotheses were tested and assessed through the path coefficients and the *t*-value produced from the relationships tabulated in Table 6. The path coefficients of the constructs show *t*-values above 1.96 as the recommended value showing significance for the 1-tailed test. It is found that subjective norms ($\beta$ = 0.235, $t$ = 3.439, $p$ = 0.000), environmental consciousness ($\beta$ = 0.479, $t$ = 5.942, $p$ = 0.000) and social media usage ($\beta$ = 0.202, $t$ = 3.376, $p$ =0.000) positively affect the consumers' purchase behaviour of sustainable apparel. Hence, H2, H4, and H5 are supported.

However, the influence of attitude towards purchase behaviour of sustainable behaviour ($\beta$ = 0.005, $t$ = 0.053, $p$ > 0.05) showed no significance as the t-value was below the recommended value of acceptance. The impact of perceived behavioural control on purchase behaviour of sustainable apparel ($\beta$ = -0.013, $t$ = 0.204, $p$ > 0.05) was not significant as well. Hence, H1 and H3 were rejected.

To test the predictive accuracy, the $R^2$ value is observed. Based on Table 6, the $R^2$ value is 0.571, indicating that the five exogenous variables (attitude, subjective norm, perceived behavioural control, environmental consciousness, and social media usage) collectively explained 57.1% of the variance in purchase behaviour of sustainable

apparel, with an acceptable predictive relevance ($Q^2$) of 0.372 as it is greater than 0.

The $f^2$ is then assessed, which is the change in the value of the $R^2$ if a certain exogenous is omitted from the model. To interpret the impact of $f^2$, it has been suggested that the effect is large when $f^2$ is 0.35, medium when it is 0.15, and small if it is 0.03 (Cohen, 1988). As shown in Table 6, environmental consciousness has a medium effect size in the model ($f^2$ = 0.261), followed by subjective norm ($f^2$ = 0.064) and social media usage ($f^2$ = 0.067) with a small effect size. However, attitude and perceived behavioural control showed a trivial effect size with the $f^2$ value of 0.

PLS-SEM was introduced as a "causal-predictive" approach to solving the apparent dichotomy between explanation and prediction (Shmueli *et al*., 2019). To be helpful for future studies, variables can be replaced because the study continues to evolve, and the researchers hope to assess out-of-sample prediction ability by retaining the sample (Hair, 2020). The present study applied PLS prediction to analyse the predictive relevance of the model to the out-of-sample prediction. As shown in Table 7, there is low predictive power for the purchase behaviour of sustainable apparel.

Table 7 : PLS Predict

| | **PLS SEM** | | **LM** | | **PLS-SEM - LM** | | **Interpretation** |
|---|---|---|---|---|---|---|---|
| | **RMSE** | **Q²_predict** | **RMSE** | **Q²_predict** | **RMSE** | **Q²_predict** | |
| PB2 | 0.707 | 0.277 | 0.701 | 0.289 | 0.006 | -0.012 | |
| PB3 | 0.771 | 0.397 | 0.741 | 0.443 | 0.030 | -0.046 | Low |
| PB4 | 0.487 | 0.393 | 0.479 | 0.412 | 0.008 | -0.019 | |

*Note: High*: PLS < LM for all the items; *Medium*: PLS < LM for majority of the items; *Low:* PLS < LM for minority of the items.

## 5.0 Discussion

The findings of the first hypothesis where attitudes toward sustainable apparel do not significantly affect consumers' purchasing behaviour were aligned with the studies of Tan *et al*. (2019) in the Malaysian setting, where the attitude was not a significant determinant of the sustainable apparel buying decision.

This can be explained that despite respondents having a good attitude, it does not mean that they would engage in purchasing sustainable apparel, which is said to be an attitude-behaviour gap

(Carrington *et al*., 2014). This further supported the notion of Ceylan (2019), where the respondents' attitudes were positive towards ecological fashion, but it did not reflect positively on their behaviours.

A study by Jung *et al*. (2020) indicated that the attitude-behaviour gap is associated with personal and psychological drivers or barriers. In another word, the individuals' personal beliefs and values (Tan *et al*., 2019) help promote or inhibit sustainable behaviours. Those determinants are caused by the individual and shared social opinions, but could also be due to demographics, lifestyle, or other psychological factors that create an attitude-behaviour gap, which further justified the contradictory result of attitudes and purchase behaviour.

In addition, Joshi and Rahman (2015) highlighted that consumers' positive environmental attitude does not necessarily translate to a green product buying decision unless it is supported by a strong personal commitment toward the environment in the first place. This has further supported the notion of Bashirun and Noranee (2020), where attitude does not have an influence on purchase behaviour for the reason that the individuals could be affected by other factors, such as social, cultural, and economic factors, that would determine how they choose to behave and perform in supporting the sustainable behaviour. This is also further supported by Anvar and Venter (2014), who stated that even though consumers have a favourable attitude towards green purchases, it does not guarantee the purchase of green products.

Similarly, the third hypothesis of this study where consumers' perceived behavioural control has shown to significantly affect the purchase behaviour of sustainable apparel aligned with the study of Zhang *et al*. (2018). Based on the findings of this study, it can be explained that the respondents believed that they are in control of buying sustainable apparel; however, the contrasting result could be because of their low facilitating condition (Tu & Hu, 2018), whereas the respondents perceived that they do not have enough resources to purchase the sustainable apparel. This can be better explained by the current demographic where most of the respondents are young adults who might not have enough financial resources, and it is the main reason for the insignificant findings where most Malaysians perceive green or environmentally-friendly products as expensive goods (Tan *et al*., 2019; Sharaf *et al*., 2015; Sharaf & Perumal, 2018).

On the other side, the other three hypotheses of this study showed significant relationships with the purchase behaviour of

sustainable apparel. Based on the findings, the respondents do value the opinions of their friends and family, including renowned experts, and that does affect their decision in purchasing sustainable apparel. It is also known that some individuals perceive engaging in environmental behaviours as a way to gain social acceptance (Augustine *et al*., 2019). Hence, social pressure and the consumers' perception of other important individuals can affect the green purchase behaviour of the consumers. This could explain the relationship observed between subjective norms and purchase behaviour of sustainable apparel (Hassan *et al*., 2022; Zahid *et al*., 2022).

Moreover, the results of this study also show that a consumer's social media usage increases their likelihood of purchasing sustainable apparel. In other words, once they are aware of the environmental issues, they feel encouraged to adopt behaviours. Hence, this supports the positive relationship shown between social media usage and purchase behaviour of sustainable apparel, which is aligned with the study of Jain *et al*. (2020) and Zhao *et al*. (2022).

In addition, environmental consciousness is also significantly related to the consumers' behaviour to purchase sustainable apparel. Previous studies have shown that social media usage contributes to environmental knowledge, which then increases their environmental consciousness, as environmental knowledge is a dimension of environmental consciousness (Sogari *et al*., 2017). Augustine *et al*. (2019) found that millennial (Gen Y) consumers in Kuala Lumpur showed that they tried to purchase eco-friendly products when they had concern for the environment and had knowledge of the environmental issues. Therefore, when consumers are more informed about the environmental issues, it will encourage them from purchasing sustainable apparel (Zhang *et al*., 2021). This has confirmed the study by Law *et al*. (2017), which indicates that green knowledge positively influences consumers' perceptions and consciousness about green products, implying that purchasing behaviour is consequently influenced by green knowledge (Amoako *et al*., 2020; Hasan *et al*., 2022; Maichum *et al*., 2017).

## 6.0 Conclusion

To conclude, this study found that subjective norms, environmental consciousness, and social media usage positively influence the sustainable purchasing behaviour among consumers in the apparel industry. Furthermore, environmental consciousness to

purchase behaviour appears to be the most prominent path to purchase behaviour, which indicates the importance of personal commitment towards the environment to form the purchase behaviour of sustainable apparel among Malaysian consumers. However, attitude and perceived behavioural control are shown to have an insignificant relationship with sustainable purchase behaviour.

## 6.1 Theoretical Implications

This study utilised the TPB in understanding the purchase behaviour of sustainable apparel among Malaysian consumers. Hence, the findings of this study contribute more insight into the relationship between the TPB model and the purchase behaviour of sustainable apparel. Despite studies showing consumers have a positive interest and attitude toward sustainable products, the percentage of the consumers who ended up buying sustainable products is quite small, resulting in the disparity in an attitude-behaviour gap (Brandão & da Costa, 2021). Many studies and research have been conducted to analyse this phenomenon in many contexts. Understanding such barriers is essential in moving towards a more sustainable society. Hence, this study can further contribute to the scholarship of green and sustainable marketing.

The framework of this research also contributes to the existing pool of academic research on sustainability and the TPB framework. This study used the three elements of the TPB model (attitude, subjective norm, and perceived behavioural control) as well as additional variables, namely environmental consciousness and social media usage, to extend the model. These variables have been used in studying the sustainable purchase behaviour context; however, they are mainly being studied separately (Jain *et al*., 2020; Sun & Wang, 2020; Ting *et al*., 2019). Hence, this study contributes to the theoretical framework and links all these variables as the determinants of the purchase behaviour of sustainable apparel.

## 6.2 Practical Implications

According to the findings of this study, companies with the collaboration of the Federation of Malaysian Consumers Associations (FOMCA) can use social media in their effort to disseminate sustainable consumption information to the public, either by making an official government account or by utilising online media agencies, as

social media usage has shown to have a relationship with purchase behaviour and due to the Malaysian population consisting of individuals who are technologically savvy and extensive social media users (Bautista, 2019).

In addition, the fashion apparel industry management will have to educate the consumers that even those the price of the sustainable apparel products might be expensive, the quality of the sustainable apparel brand is still assured, as fashion retail can use the green marketing strategy as a way to help the private sectors, where some percentage of the profit will be channel back to the sectors and align with the sustainable development goals (SDGs) through the initiatives of United Nations Development Program (Davidsen, 2019).

In addition, the apparel industry can also come out with a campaign for recycling back the second-hand clothes or garments by giving discounts or cash to the consumers who recycle the second-hand apparel to make the industry more sustainable and reduce wastage. Thus, it will serve as a role model for the other apparel brands, as sustainability will become a practice in the near future (Close, 2021).

Furthermore, this research showed no significant relationship between perceived behavioural control and purchase behaviour of sustainable apparel. It suggests that consumers find it difficult to access sustainable apparel. In response, the retailer could consider establishing online stores, such as a website or a social media account with relevant sustainability tags, as a way to utilise the online search engine optimization (SEO), allowing consumers to easily access their sustainable products (Confetto & Covucci, 2021).

Lastly, this study observed a lack of relation between attitude and purchase behaviour of sustainable apparel. Findings such as this are expected as there exists a gap between attitude and purchase behaviour. To address this, fashion retailers or FOMCA could implement programs to encourage individuals to engage in sustainable behaviour, including using public transport, donating clothes, and buying or using second-hand clothes. These programs could further instil positive attitudes towards the environment and possibly facilitate their attitude into actual pro-environmental behaviour in the future.

### 6.3 Limitations and Future Research Direction

Although it has a few significant implications, there are also several limitations in this study. Firstly, this study used purposive

sampling, which did not allow the findings of this study to be generalised. Thus, the future researcher may utilise probability sampling to make the findings generalisable when studying sustainable purchase behaviour.

The current study only investigated the research from the viewpoints of positivism (deductive approach). Thus, the future study can incorporate the mixed-methods (pragmatics) approach by using qualitative and quantitative research designs to provide a deeper understanding of the sustainable issues among consumers.

Furthermore, this study does not focus on a specific type of sustainable apparel, such as organic cotton apparel or second-hand apparel, and its brand, so future studies could do a comparative study on various brands of sustainable apparel and compare the results to provide more insights and add more varieties into the research.

The current study only focused on the direct effects, other variables, such as green self-concept (Abrar *et al*., 2021; Sharma *et al*., 2020) and green image (Han, 2021) could be added to the consumers' predisposition to buy sustainable apparel in the future. Price could be added as well since this study showed there is a relationship between the price and purchase behaviour based on the past findings of (Tan *et al.*, 2019).

Lastly, the respondents of the current study mostly focus on the young generations, thus, future research can collect nearly equal respondents who represent each age and income group by testing these socio-demographic variables, as suggested by Witek and Kúzniar (2020), as moderators and performing the multi-group analysis (MGA) to make the model more robust in contributing to the green and sustainable marketing scholarship.

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## Appendix A

**Attitude (ATT)**
ATT 1. I support buying sustainable apparel.
ATT 2. I believe that sustainable apparel is trendy.
ATT 3. I believe purchasing sustainable apparel or products is good for the environment.
ATT 4. I have a favorable attitude towards sustainable apparel or products.

**Subjective/ Social Norms (SN)**
SN 1. I value the opinion of my friends and family on purchasing sustainable apparel. *(deleted)*
SN 2. The opinions of renowned experts or environmental organizations affect my choices in purchasing sustainable apparel.
SN 3. Most of the people who are important to me think that purchasing sustainable apparel is a good thing.

**Perceived Behavioral Control (PBC)**
PBC 1. I have the resources and opportunities to purchase sustainable apparel.
PBC 2. Sustainable apparel is easy to purchase.
PBC 3. I am capable of purchasing sustainable apparel.
PBC 4. I have complete control over purchasing sustainable apparel.

**Environmental Consciousness (ENC)**
ECN 1. I am very conscious of the environmental issues that are happening in the world.
ECN 2. I am conscious that purchasing sustainable apparel will have a positive effect on the environment.
ECN 3. I make efforts to better the environment by purchasing sustainable apparel.
ECN 4. I am conscious of the long-term consequences of unsustainable behavior.

**Social Media Usage (SMU)**
SMU 2. I use social media to search for information about the sustainable fashion that I think very trendy.
SMU 3. I use social media to gather information about environmental issues or sustainable products from consumers, brands, or organizations.

SMU 4. After finding information on environmental issues on social media, I feel motivated to adopt attitudes to improve the environment.

**Purchasing Behavior (PB)**

PB 1. I buy sustainable apparel which made from organic cotton, recycled material, or second hand material. (*deleted*)
PB 2. I would buy sustainable apparel if I see it as an option in stores.
PB 3. When shopping, I intentionally look for apparel that is sustainable or environmentally friendly.
PB 4. I will continue to buy sustainable apparel in the future.