UNDERSTANDING GREEN PURCHASE INTENTION TOWARDS ECO-FRIENDLY CLOTHING AMONG UNIVERSITY STUDENTS IN INDONESIA AND MALAYSIA

Denti Kusuma Wardani [1*], Adiza Alhassan Musah [2] and Karnowahadi [3]

[1,2] Management and Science University, Shah Alam, Malaysia.
[3] Semarang State Polytechnic, Semarang, Indonesia.
Email: [1]dentikusuma2000@gmail.com (*Corresponding Author),
[2]adiza_alhassan@msu.edu.my, [3]karnowahadi@polines.ac.id

Abstract

The objective of this study is to analyze the impact of attitude, subjective norms, perceived behavioral control, and social media marketing on the intentions of university students in Indonesia and Malaysia to purchase eco-friendly clothes. In addition, it aims to determine the influence of subjective norms on the relationship between attitude and intention to make environmentally-friendly purchases, as well as the relationship between perceived behavioral control and intention to make environmentally-friendly purchases. A quantitative study was conducted, collecting empirical data from a sample of 228 Indonesian and 152 Malaysian university students. The process of analyzing the data included the use of SPSS 25 for conducting descriptive statistics and SmartPLS for performing structural equation modeling (SEM). SmartPLS 4.0, a software tool for structural equation modeling (SEM), processed the data primarily for hypothesis testing. Confirmatory factor analysis and Cronbach's alpha, both well-established in previous research, assessed the reliability and validity of the scales used in this study. The study applied structural equation modeling (SEM) to examine the model and hypothesis. The findings indicate that attitude, perceived behavioral control, subjective standards, and social media marketing have a substantial impact on individuals' intentions to make green purchases. Attitude is the first determinant, followed by social media marketing as the second key component. The presence of subjective norms did not have a significant impact on the correlations between attitude and perceived behavioral control regarding the intention to make green purchases. The study demonstrates that students possess a robust environmental consciousness, and the utilization of social media marketing proves to be highly efficient in promoting environmentally friendly products. This study proposes that attitude and social media marketing play a vital role in influencing individuals' intentions to make environmentally friendly purchases and encouraging sustainable consumer behavior.

Keywords: Green Purchase Intention, Eco-friendly Clothing, Social Media Marketing, Theory of Planned Behavior.

1. INTRODUCTION

Concerns about consumer behavior's environmental impact have increased over the past few years (Sousa et al., 2022). The global expansion of markets and the population has altered consumption patterns, affecting overall wellness (Abeysekera et al., 2022). Issues like carbon emissions, global warming, resource depletion, and rising greenhouse gases are consequences of unsustainable consumption (Ansu-Mensah, 2021). These practices also disrupt local ecosystems, with long-term effects on present and future generations. Educating younger people about these issues is crucial for fostering economic growth that benefits society, the environment, and the economy (Abeysekera et al., 2022).

Green marketing addresses the needs of environmentally conscious individuals and is vital for ensuring environmental stability, economic development, and human well-being (Abrar et al., 2021). Various industries, including cosmetics (Shimul et al., 2022) and textiles, have adopted green products.

The textile industry, a major global polluter (Hasbullah et al., 2022), is evolving to meet the demand for fast fashion while facing significant environmental challenges due to chemically produced fibers, toxic dyes, and high carbon emissions (Abrar et al., 2021). Environmentally aware consumers prefer eco-friendly products (Witek & Kuźniar, 2021). Sustainable clothing integrates social and environmental considerations, such as fair trade principles, biodegradable materials, and organic cotton. Major brands are increasingly profiting from sustainable apparel, highlighting the importance of promoting eco-friendly products and engaging consumers for industry sustainability (Su et al., 2019).

The success of businesses depends on their ability to attract consumers globally (Saepudin et al., 2023). While "green products" are popular in the West, their adoption in South Asia is still emerging (Abrar et al., 2021). Indonesia and Malaysia, with their unique markets, offer potential for green retail growth, although they are under-researched compared to global standards (Jin & Kim, 2022). Emerging economies are shifting consumer markets by promoting green products to protect the environment (Chen et al., 2018). Indonesia's rapid deforestation (Arli et al., 2018) and Malaysia's gradual embrace of eco-friendly fashion (Hasbullah et al., 2022) illustrate the region's evolving green market.

Icek Ajzen's Theory of Planned Behavior (TPB) is a widely accepted model for predicting consumer behavior, incorporating attitude, subjective norms, and perceived behavioral control (Chrisniyanti & Fah, 2022; Ajzen, 1991; Ngah et al., 2021). Previous studies show that these factors significantly influence purchase intention (Ngah et al., 2021; Abeysekera et al., 2022; Sun & Wang, 2020), though some findings suggest subjective norms may not always moderate these relationships effectively (Jain, 2020). Researchers have extended TPB by adding variables to better predict behavior in different settings (Abrar et al., 2021; Mai & Linh, 2017).

Despite significant attention from marketing scholars, literature on purchasing intentions for eco-friendly clothing remains limited (Abrar et al., 2018; Hasan et al., 2022). This study extends the TPB model by including social media marketing (SMM) as an independent variable. Social media supports commercial activities and enhances business performance, playing a crucial role in promoting green products (Moslehpour et al., 2022; Sun & Wang, 2022). The rising number of social media users, particularly among college students, underscores its influence on green purchase intentions and environmental attitudes (Tankovska, 2021; Nekmahmud et al., 2022).

Furthermore, the objectives that need to be accomplished to achieve the purpose of this research have been outlined in the following: 1) To examine the effect of attitude on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia. 2) To examine the effect of subjective norms on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia. 3) To examine the effect of perceived behavioral control on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia. 4) To examine the effect of social media marketing on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia. 5) To ascertain the moderating effect of subjective norms between attitude and green purchase intention towards eco-friendly clothing. 6) To

ascertain the moderating effect of subjective norms between perceived behavioral control and green purchase intention towards eco-friendly clothing.

Research questions this research have been outlined in the following; 1) Does attitude have a significant relationship with students' purchase intentions towards eco-friendly clothing in Indonesia and Malaysia?; 2) Does the existence of subjective norms influence a university student's intention to purchase eco-friendly clothing in Indonesia and Malaysia?; 3) Does perceived behavioral control influence university students' intention to purchase eco-friendly clothing in Indonesia and Malaysia?; 4) Are students' purchase intentions towards eco-friendly clothing derived from social media marketing in Indonesia and Malaysia?; 5) Will subjective norms act as a moderating variable between attitude on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia?; 6) Will subjective norms act as a moderating variable between perceived behavioral control on green purchase intention towards eco-friendly clothing among university students in Indonesia and Malaysia?.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Theory of Planned Behavior

The theory of planned behavior looks at the relationship between beliefs, attitudes, intentions, and behavior in a more general way. It does this by putting the concept of self-efficacy belief or perceived behavioral control into a larger framework (Ajzen, 1991). In the theory of planned behavior, positive attitudes toward behavior (attitude), stress from other people who affect the person's life (subjective norms), and feelings of how easy or hard the behavior is to do (perceived behavioral controls) all affect individual intentions to engage in certain behaviors (Ajzen, 1991; Tan et al., 2022).

Based on the person's level of free will and control over the behavior in question, the study suggests that intention is the closest measure of human behavior (Kamalanon et al., 2022). According to literature by Wu et al. (2021) conceptually, attitudes, subjective norms, and perceived behavioral control can all be thought of as separate things, but they are related to each other when they come in pairs.

2.2 Extended The Theory of Planned Behavior Model

According to Conner & Armitage (1998) opine that additional research is required to establish a causal connection among the variables in the TPB and its extensions. In the meantime, prior research has expanded the TPB model in order to study consumers' intentions to purchase environmentally friendly products by incorporating new variables into the framework of the existing variables (Zhuang et al., 2021).

For instance, the literature by Masukujjaman et al. (2023) added new variables to the TBP model, such as perceived value, reasonable pricing, green building knowledge, and environmental concern. Meanwhile, the study from Sun & Wang (2019) added social media marketing as a new variable in the TBP model and showed a positive association with green purchase intention.

2.3 The Linkage Attitude and Green Purchase Intention

Attitude is the degree to which a person's feelings about certain behaviors show whether they think those behaviors are good or bad. (Ajzen, 1991; Sousa et al., 2022). Consumers in Malaysia who have a positive view of the environment are more likely

to want to buy environmentally friendly homes (Masukujjaman et al., 2023). Study by Saepudin et al. (2023) found that in Indonesia, attitude emerged as the most influential factor on purchase intention about eco-friendly fashion.

Additionally, attitude emerged as the most variable-dependent factor influencing the intention to purchase eco-friendly baby clothing (Komara & Yuliati, 2023). Attitude is the factor that most influence green purchase intention towards eco-friendly clothing among university students in Pakistan (Abrar et al., 2021), Bangladesh (Hasan et al., 2021, Hasan et al., 2022) , and the United States (Hasan et al., 2021). Research by Al-Quran et al. (2020) showed that attitude is linked to GPI in a positive way that is not statistically significant. Thus, the following hypotheses are formulated

H_1: Attitude have a positive and significant effect on green purchase intention.

2.3 The Linkage Subjective Norms and Green Purchase Intention

Subjective norms are defined as "an individual's perception that most people who are significant to him or her think he or she should or should not perform the behavior in question" (Fishbein and Ajzen, 1975, p. 302). Prior studies have examined the influence of subjective norms on green purchase intention (Tan et al., 2022; Abeysekera et al., 2022; Kamalanon et al., 2022; Zhuang et al., 2021). In an effort to protect the environment, consumers are more likely to purchase eco-friendly products when there is a strong external influence or peer recommendation (Zhuang et al., 2021).

The influence of subjective norms on the intention to purchase eco-friendly clothing (Abrar et al., 2018; Hasan et al., 2021; Hasan et al., 2022; Komara & Yuliati, 2023). Literature from Ko & Jin (2017) found a significant and positive relationship between subjective norms and purchase intention for eco-friendly clothing among university students in America and Chinese. In contrast, Sousa et al. (2022) discovered that subjective norms had no effect on the green purchase intentions of college students, which is consistent with the findings of Kamalanon et al. (2022), who discovered a negative correlation between subjective norms and the intention to purchase green products. Hence, the following hypotheses are formulated:

H_2: Subjective norms have a positive and significant effect on green purchase intention.

2.4 The Linkage Perceived Behavioral Control and Green Purchase Intention

Perceived behavioral control is defined as a measure of how easy or hard people think it is to do the behavior of interest (Ajzen, 1991). There is a positive and significant relationship between perceived behavioral control and green purchase intention, according to previous research (Harjadi & Gunardi, 2022; Sun & Wang, 2019; Abeysekera et al., 2022). Perceived behavioral control affecting green purchase intention towards eco- friendly clothing (Abrar et al., 2018; Nguyen et al., 2019; Bong Ko & Jin, 2017; Komara & Yuliati, 2023).

Sousa et al. (2022) found that perceived behavioral control influenced students' intentions to purchase environmentally friendly products. University students in Hungary have a strong and positive relationship between perceived behavioral control and the intention to purchase green products in the context of social media (Nekmahmud et al., 2022).

Hence, the following hypotheses are formulated:

H[3]: Perceived behavioral control have a positive and significant effect on green purchase intention.

2.5 The Linkage Social Media Marketing and Green Purchase Intention

Social media marketing (SMM) is a two-way form of communication that tries to understand young users and even makes older people feel the same way they do about brands they already know. Purchase intent is the likelihood that a consumer will make a future purchase (Kim & Ko, 2012).

Chrisniyanti and Fah (2022) discovered that social media marketing has a significant impact on purchase intent. According to Sun & Wang (2019) using social media, marketers can search for and recommend environmentally friendly products to potential target consumers.

According to the findings of the study by Nekmahmud et al. (2022), Social media marketing had a significant positive effect on the intention to purchase eco-friendly products. Sun and Wang (2019) demonstrated a positive correlation between SMM and the intention to purchase a green product. Hence, the following hypotheses are formulated:

H[4]: Social media marketing have a positive and significant effect on green purchase intention.

2.6 The Linkage Between Subjective Norms and Attitude on GPI

Subjective norms might even moderate the TPB's relationships between variables (Al-Swidi et al., 2014) and may play a crucial role in explaining the relationship between attitude and purchase intention (Jain, 2020). In Pakistan, subjective norms moderated the relationship between attitude and intentions to purchase organic food (Al-Swidi et al., 2014).

In India, among Generation Y, subjective norms also serve as a moderating variable between attitude and purchase intention for luxury items. (Jain, 2020). Recent research by Harjadi and Gunardi (2022) indicates that subjective norms positively moderate the relationship between attitude and eco-friendly purchase intention. Hence, the following hypotheses are formulated:

H[5]A: Subjective norms usage moderates the relationship between attitude and green purchase intention.

2.7 The Linkage Between Subjective Norms and PBC on GPI

Al-Swidi et al. (2014) found that subjective norms moderate the association between perceived behavioral control and the intention to purchase organic food. According to the findings of Abeysekera et al. (2022), subjective norms, particularly those formed by the community, can influence PBC regarding the amount of control they have over purchasing environmentally friendly products. According to the findings of Harjadi and Gunardi's (2022) study, however, there is no moderate act of subjective norms between perceived behavior control and the intention to make environmentally friendly purchases. Hence, the following hypotheses are formulated:

H[5]B: Subjective norms usage moderates the relationship between perceived behavioral control and green purchase intention

3. METHODOLOGY

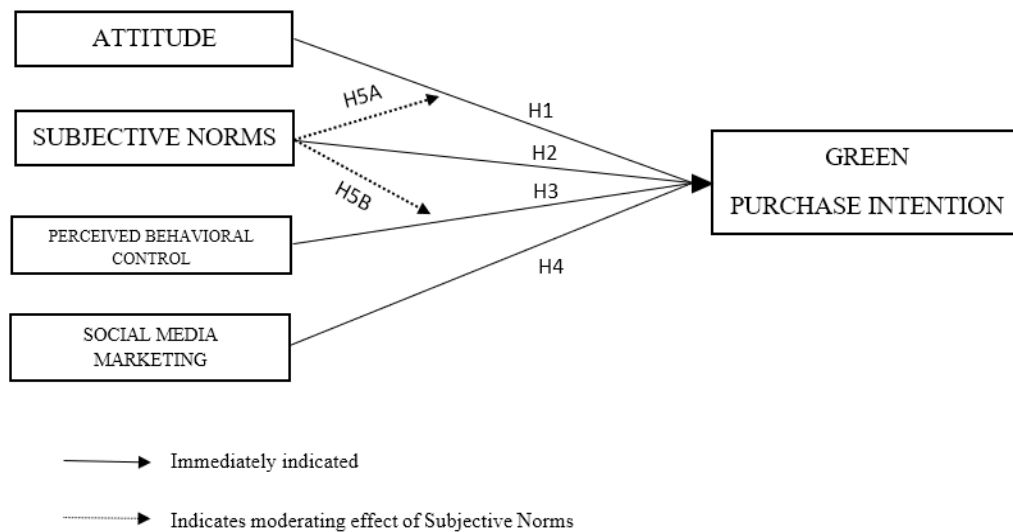## 3.1 Conceptual Framework

Figure 1: Conceptual Framework

Sources: Ajzen, 1991; Nekmahmud et al., 2022; Jain, 2020, with modified.

Figure 1 displays an integrated conceptual framework for the study. The framework represents the direct effect of attitude, subjective norm, and PBC on green purchase intention and the moderating effect of subjective norm on attitude and PBC.

3.2 Research Design Process

This study employs a deductive research approach, using the theory of planned behavior to formulate hypotheses about the relationships between variables: attitude, subjective norms, perceived behavioral control, social media marketing activities, and green purchase intention. It follows a quantitative method, gathering primary data through questionnaires assessing these variables. Secondary data include literature reviews. The study uses cross-sectional surveys to collect data from various population segments at a single point in time, fitting within the positivist paradigm (Zikmund et al., 2009).

3.3 Instrument Development Process

The study's questionnaire draws from previous research, adapting items for clarity and relevance to include demographic information and objective questions on attitude, subjective norms, perceived behavioral control, social media marketing (SMM), and green purchase intention. The questionnaire is translated into English and Bahasa Indonesia using the cross-cultural adaptation of research instruments. Internal reliability for the pilot study is assessed using Cronbach's alpha and composite reliability, with coefficients exceeding 0.7 (Kamalanon et al., 2022). SPSS 25 is used for validity testing. Variables include attitude (X1), subjective norms (X2), perceived behavioral control (X3), social media marketing (X4), and green purchase intention (Y1), with subjective norms (M1) as moderating variables. The questionnaire will have two parts: (1) personal information and (2) objective questions. The questionnaire will be translated into two languages, namely Indonesian and English.

3.4 Data Analysis Process

In this study, data were collected through an online survey distributed via Google Forms, following methods similar to previous research (Chrisniyanti & Fah, 2022; Moslehpour et al., 2022; Rahaman et al., 2022). Data coding involved converting qualitative responses into numerical scores for quantitative analysis using Microsoft Excel and SPSS 25 (Seddiky et al., 2023). Statistical analysis utilized IBM SPSS 25 for descriptive statistics while SmartPLS 4.0 facilitated Partial Least Squares (PLS) path modeling for hypothesis testing and structural equation modeling (SEM) (Husain et al., 2022; Tarofder et al., 2023). This approach allows for examining relationships among variables in a comprehensive manner, ensuring robust validity and reliability assessments. The data cleaning process involved importing 380 data points from Google Forms to Excel, followed by checking skewness and kurtosis in SPSS 25 to identify outliers and ensure data normality (Saepudin et al., 2023).

Subsequently, the data was processed in SMART PLS 4.0, verifying each indicator's Variance Inflation Factor (VIF) to detect multicollinearity (Hair et al., 2014). The measurement model underwent rigorous evaluation including validity, reliability, discriminant validity, and factor loading tests through Confirmatory Factor Analysis (CFA) (Tarofder et al., 2023). Cronbach's alpha and composite reliability coefficients ensured strong internal consistency, while high factor loadings and Average Variance Extracted (AVE) confirmed good convergent validity (Hair et al., 2014). Discriminant validity was assessed using Heterotrait-Monotrait (HTMT) ratios and Fornell-Larcker criteria (Tarofder et al., 2023). The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze relationships among variables due to its ability to handle complex models and specify reflective measurement models effectively (Dash & Paul, 2021). Hypothesis testing included assessing direct and mediating effects, using 't' values and path coefficients with critical values set at 1.96 (Hair et al., 2014). Effect sizes (f^2) indicated the magnitude of independent and mediating variables' impact on outcome variables (Tarofder et al., 2023).

4. RESULTS AND DISCUSSIONS

4.2 Response Rate

The sample size of 380 respondents was obtained from 224 respondents from Indonesian students and 156 respondents from Malaysia, representing a total study population of 36.570. The final results of this research required sample size of 380 respondents, resulting in a 92.7% response rate according to sample size. However, the number of respondents from Indonesia was 228, while the number from Malaysia was 152.

4.5.1 Respondent Demographic Profile

The results of primary data collection through the distribution of questionnaires were obtained from 458 responses received, 380 of which were usable. The study revealed that respondents' characteristics included students' university country, gender, age, and education level. Demographic information on students' university country, gender, age, and education level. The majority of respondents are from Indonesia (60%), with the remaining 40% from Malaysia. In terms of gender, 64.7% are female and 35.3% are male. The age distribution shows that 21.6% are between 16-21 years old, 57.4% are between 22-30 years old, 16.1% are between 31-40 years old, and 5% are over 40 years old. Regarding education level, 1.6% are in the Foundation stage, 18.7%

hold a Diploma, 48.4% are pursuing or have completed a Bachelor's or Applied Bachelor's degree, 22.9% are at the Master's level, and 8.4% are PhD students. the majority of the respondents were Indonesian students, which was 60%, and was dominated by females. The respondents came from different education levels, and the majority were bachelors or applied bachelors (48.4%). According to that, we can conclude that the respondents are able to understand the needs of the questionnaire and reach the objective of this study.

4.6 Interpretation of Data Analysis

SmartPLS 4 was employed to execute the measurement and analysis of Partial Least Squares (PLS). Examining PLS-SEM data requires two steps. The first step is to look at the measurement models (outer model) and rate them. If Step 1's evaluation of measurement quality is positive, Step 2's evaluation of the structure model (inner model) goes ahead. The second step assesses the structural theory used to examine the proposed hypotheses (Hair, Matthews, Matthews, & Sarstedt, 2017; Sarstedt et al., 2022).

4.6.2 The Measurement Model

As suggested by Cohen (1988) and Tarofder et al. (2023) the assessment model for this study underwent two stages of evaluation. Several factors were used to evaluate the measurement model before the structural model was evaluated. There are tests for validity and reliability, as well as tests for discriminant validity and factor loading for the measuring model.

4.6.2.1 Indicator Loading

The reliability of indicators is detailed in Table 1.

Table 1: Item Loadings

	AT	GPI	PBC	SMM	SN	SN x AT	SN x PBC
AT1	0.831						
AT2	0.818						
AT3	0.774						
AT4	0.815						
GPI1		0.832					
GPI2		0.791					
GPI3		0.805					
GPI4		0.770					
GPI5		0.801					
PBC1			0.793				
PBC2			0.779				
PBC4			0.790				
PBC5			0.772				
SMM1				0.785			
SMM2				0.708			
SMM3				0.786			
SMM4				0.788			
SMM5				0.818			
SN1					0.746		
SN2					0.762		
SN3					0.776		
SN4					0.777		
SN5					0.780		
SN x AT						1.000	
SN x PBC							1.000

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

Indicator loadings should be higher than 0.70 (Hair et al., 2014), when the loadings are above 0.708, it means that the construct explains more than 50% of the indicator's variation (Sarstedt et al., 2020). This shows that the indicator is reliable enough. Table 3 shows that every loading value exceeded 0.70, indicating each construct's strong influence on its variables. However, AT5 and PBC3 had factor loadings lower than the recommended value. Hence, these items were further removed.

4.6.2.2 Construct Reliability

According to Table 4, the results indicate strong internal consistency, as the value of Cronbach Alpha (CA) and Composite Reliability (CR) for each variable was greater than 0.70 (Cohen, 1988; (Sarstedt et al., 2022; Tarofder et al. 2023).

Table 4: Construct Reliability

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
AT	0.825	0.830	0.884
GPI	0.860	0.861	0.899
PBC	0.791	0.794	0.864
SMM	0.836	0.839	0.884
SN	0.827	0.829	0.878

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

4.6.2.3 Convergent Validity

The convergent validity is detailed in Table 5. Findings also confirmed good convergent validity as the value for both factor loading and Average Variance Extracted (AVE). An AVE value of 0.50 and higher indicates a sufficient degree of convergent validity, meaning that the latent variable explains more than half of its indicators' variance (Hair et al., 2014). According to Table 5, each item was higher than the threshold. The results of this evaluation provided strong evidence of outstanding convergent validity and reliability. Therefore, this study utilized all the items specified in the questionnaire for further analysis.

Table 5: Convergent Validity

	Average Variance Extracted (AVE)
AT	0.656
GPI	0.640
PBC	0.614
SMM	0.605
SN	0.590

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

4.6.2.4 Discriminant Validity

the results are presented in Table 6. According to Table 6, all HTMT values are below 0.85. The Fornell-Larcker outcome is presented in Table 7. According to Table 7, the square roots of AVE for all the latent variables and values were considerably higher than their correlation with other constructs. Hence, this study showed that the proposed model had a good amount of discriminant validity.

Table 6: The Heterotrait-Monotrait

	AT	GPI	PBC	SMM	SN	SN x AT	SN x PBC
AT							
GPI	0.762						
PBC	0.840	0.795					
SMM	0.762	0.760	0.841				
SN	0.626	0.711	0.778	0.638			
SN x AT	0.508	0.569	0.426	0.462	0.423		
SN x PBC	0.455	0.599	0.478	0.470	0.508	0.782	

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

Table 7: Fornell-Larcker Criterion

	AT	GPI	PBC	SMM	SN
AT	**0.810**				
GPI	0.646	**0.800**			
PBC	0.686	0.665	**0.784**		
SMM	0.634	0.646	0.688	**0.778**	
SN	0.517	0.604	0.628	0.532	**0.768**

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

4.6.3 The Structural Model

The structural model also illustrates the relationships or pathways between the constructs (Hair et al., 2021). According to Sarstedt et al. (2020), the steps for evaluating the structural models are as follows: (1) examine collinearity; (2) assess the R^2 and Q^2; (3) assess the size and significance of the structural path relationships; and (4) assess the f^2 effect size.

Figure Structural Model
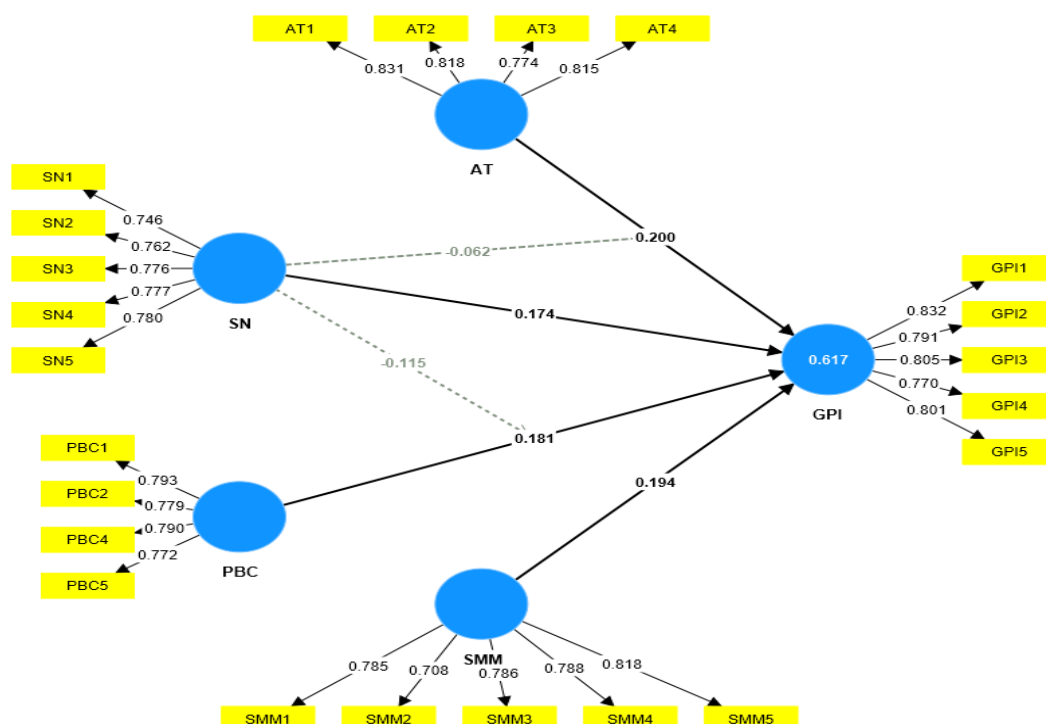
4.6.3.1 Collinearity

From Table 8, all VIF values from each item less than 5 were assessed to ensure the non-existence of multicollinearity issues for all latent variables.

Table 8: Indicator of Multicollinearity

Item	VIF	Item	VIF
AT1	1.782	SMM1	1.788
AT2	1.775	SMM2	1.554
AT3	1.625	SMM3	1.880
AT4	1.800	SMM4	1.860
GPI1	2.110	SMM5	1.946
GPI2	1.787	SN1	1.706
GPI3	1.870	SN2	1.701
GPI4	1.760	SN3	1.760
GPI5	1.916	SN4	1.834
PBC1	1.743	SN5	1.804
PBC2	1.701	SN x AT	1.000
PBC4	1.522	SN x PBC	1.000
PBC5	1.484		

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

4.6.3.2 The final model (R^2 and Q^2) and Model Fit

Table 9: R Square

	R-square	R-square adjusted
GPI	0.617	0.610

NOTE: GPI=Green Purchase Intention.

Cohen (1988) recommended R^2 values for endogenous latent variables based on: 0.26 (substantial), 0.13 (moderate), and 0.02 (weak). According to Table 9, the R-square adjusted value of 0.610 is substantial. The R square value of GPI is 0.610, indicating that AT, SN, PBC, and SMM influence 61% of changes in GPI, while variables not included in the model influence the remaining 39%. The results made it clear that Q^2 values were always greater than zero, which proves that this model can be used to make predictions.

Table 10: Predictive Power (Q^2)

	Q^2 (=1-SSE/SSO)
AT	0.422
GPI	0.457
PBC	0.354
SMM	0.406
SN	0.383

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

Based on suggestions from Tarofder et al. (2023) this study also used several indices, such as NFI and SRMR, to check how well the model fits the data. According to Yuan et al. (2023) NFI values exceeding 0.80 are considered acceptable, while SRMR values below 0.80 are considered acceptable.

Table 11: Model Fit

	Saturated model	Estimated model
SRMR	0.063	0.062
NFI	0.823	0.830

Table 11 shows the SRMR value is 0.062, which is less than 0.08, and the NFI value is 0.830, which is more than 0.80. Consequently, the model satisfies the criteria for model fit.

4.6.3.3 Size and Significance of Path Coefficients

The path coefficients and p values are calculated using the bootstrapping technique. The 't' values and path coefficient are employed to assess the validity of the previously proposed hypotheses.

The critical t-value for a two-tailed test in this study is 1.96 because the significance level is 5 percent (0.05) (Hair et al., 2014). The coefficients, t-values, and levels of significance (p-values) are shown in Table 12. All the hypothesized path coefficients are statistically significant.

Table 12: Hypotheses Test

Hypothesis	Path	β	T-Value	P values	Conclusion
H_1	AT -> GPI	0.200	2.391	0.017	Supported
H_2	SN -> GPI	0.174	2.298	0.022	Supported
H_3	PBC -> GPI	0.181	2.405	0.016	Supported
H_4	SMM -> GPI	0.194	2.341	0.019	Supported

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

Based on Table 12, attitude (β = 0.200, t = 2.391, p < 0.05) has the most influence on green purchase intention. The study results show that attitude positively explains 20.0 percent of the variance of green purchase intention, so H_1 is supported. The second strongest influence of green purchase intention is social media marketing (β = 0.194, t = 2.341, p < 0.05).

The study results show that social media marketing positively explains 19.4 percent of the variance of green purchase intention, so H_4 is supported. In third place is perceived behavioral control (β = 0,181, t = 2.405, p < 0.05).

Perceived behavioral control positively explains 18.1 percent of the variance in green purchase intention, so H_3 is supported. The last is subjective norms (β = 0.174, t = 2.298, p < 0.05) subjective norms positively explain 17.4 percent of the variance in green purchase intention, so H_2 is supported.

4.6.3.4 The Effect Size (f^2)

This study also checks the effect size (f^2), which is a very useful way to find out how much the independent and mediating variables affect R^2 (Tarofder et al., 2023). Based on Cohen (1988), there are three classifications for effect size (f^2), namely: $0.02 \leq f^2 < 0.15$: Small Effect (S); $0.15 \leq f^2 < 0.35$: Medium Effect (M); $f^2 \geq 0.35$ Larger effect (L).

Table 13: The Effect Size (f^2)

Path	f^2	Effect Size
AT -> GPI	0.046	Large
SN -> GPI	0.036	Large
PBC -> GPI	0.054	Large
SMM -> GPI	0.034	Medium

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; SMM=Social Media Marketing; GPI=Green Purchase Intention.

According to Table 13, perceived behavioral control has the largest effect on green purchase intention (f^2 = 0.054). Attitude comes in second place with an effect size of 0.46 (L), followed by subjective norms with an effect size of 0.036 (L). Social media usage has the smallest effect (M) on green purchase intention (f^2 = 0.034).

4.6.4 Moderation Analysis

The study assessed the moderating role of SN in the relationship between AT and PBC on GPI. This study evaluated the moderating role of SN in the relationship between AT and PBC to GPI. Without including the moderating effects of (AT*SN) and (PBC*SN), the R^2 value for GPI is 0.573. This indicates that AT, SN, PBC, and SMM account for 57.3% of the changes in GPI. With the inclusion of the interaction term, R^2 increases to 61%. This represents an increase of 3.7% in the variance explained by the dependent variable (GPI). The path coefficients and p values are calculated using the bootstrapping technique. The 't' values and path coefficient are employed to assess the validity of the previously proposed hypotheses. The result of bootstrapping can be seen in Figure 4.

Table 14: Moderation Analysis

Hypothesis	Path	β	T-Value	P values	Conclusion
H5$_A$	SN x AT -> GPI	-0.062	1.008	0.313	Not supported
H5$_B$	SN x PBC -> GPI	-0.115	1.811	0.070	Not supported

NOTE: AT=Attitude; SN=Subjective Norms; PBC=Perceived Behavioral Control; GPI=Green Purchase Intention.

The significance of the moderation effect was analyzed, and the results showed a negative and insignificant moderation impact of SN on the relationship between AT and GPI (β = -0.062, t = 1.008, p > 0.05), rejecting H5$_A$. The moderating effect of SN is also negative and not significant on the relationship between PBC and GPI (β = -0.115, t = 1.811, p > 0.05) which means that H5$_b$ is rejected. Table 14 presents a summary of the moderation analysis.

4.7 Critical Discussion

This study aims to comprehend the elements affecting students' intentions to buy environmentally friendly clothes in Indonesia and Malaysia. This study combined student populations from two countries. University students share several significant characteristics in terms of environmental preservation, which supports the decision to investigate their behavior. These include the following: attending university and acquiring valuable information, particularly regarding environmental issues; confronting the repercussions of their parents' and grandparents' detrimental environmental practices; serving as current and future consumers; and serving as an effective spokesperson for future environmental changes (Sousa et al., 2022).

Previous research indicates that a business's ability to draw customers from other countries is crucial for its success (Saepudin et al., 2023), in South Asian countries it is still in the early phases of development (Abrar et al., 2021)r. Indonesia and Malaysia have plenty of potential as new retail markets in Southeast Asia, but their complex differences from global retailers are still not fully studied (Jin & Kim, 2022). Emerging countries are economically disciplined and seeking progress, and they have changed the consumer market, especially by selling green items to protect the environment (Chen et al., 2018). Additionally, the examination of cross-cultural distinctions that extend beyond the scope of this research can provide a more comprehensive understanding of the relationship (Ko & Jin,2017).

The associations between three independent variables in TPB theory, namely, AT, SN, and PBC, influence significantly positive purchase intentions towards green clothing in line with several previous literature (Abrar et al., 2021). Attitude was the most influential factor of the three, with perceived behavioral control following in second place and subjective norms in third. Another study concluded that consumers are willing to buy eco-friendly clothing because of their caring attitude towards the environment (Abrar et al., 2018). They are aware that organic textile products are more beneficial for the environment and health than conventional textile products. While the attitude positively impacts the purchase intention for organic textile products, as supported by the literature (Abrar et al., 2021), therefore the result of this study supports H_1. The second hypothesis was also accepted and provided an answer to the research question., the significant positive effect on SN suggests that knowledge influences the expectations of important people in a collectivist society. SN positively influences GPI towards eco-friendly clothing, and this result supports previous studies. This research also found that SN showed insignificant moderation between attitude and perceived behavior control, on green purchase intention. This finding implies that students who strongly believe in behavior and think they have control over their decision to buy eco-friendly clothing do not care about what their peers think of them. This result contrasts with the previous literature (Abeysekera et al., 2022). Therefore, H5a and H5b were rejected. In this study, PBC significantly influences GPI towards eco-friendly clothing, in line with previous literature (Abrar et al., 2021) which indicates that how easy or difficult a product is to buy depends on how others buy it. Customers are more likely to encounter fewer obstacles to buying organic cotton clothing when they believe that important others are. This finding is consistent with earlier studies that indicate members of collectivistic cultures value conformity highly (Kitayama et al., 1995; Han, 2018). In short, this study accepted H_3.

This study proposed and tested an extended TPB model with the addition of one component, namely social media marketing (SMM). SMM is the second strongest variable that significantly influences GPI towards eco-friendly products. Our results are consistent with previous research (Nekmahmud et al., 2022b). Findings indicate that eco-friendly clothing' SMM is a significantly effective marketing. Analysis of the data revealed that this study approved H_4. This is a novel outcome of SMM's substantial positive influence on GPI. It is recommended that consumers utilize social media to acquire knowledge regarding environmentally friendly products and services, as well as to learn about how they can contribute to the well-being of individuals and the environment. Marketers in Asia use SMM as their main strategy to increase relationships with customers, build trust in company brands, and increase purchase intention (M. L. Cheung et al., 2020). SMM encourages consumers to purchase

environmentally friendly products. Simultaneously, they distribute the SMM post regarding environmentally favorable products to their acquaintances and relatives. By utilizing social media, marketers can search for and recommend environmentally friendly products to sustainable potential target customers.

5. CONCLUSION

This study's objective is to investigate the factors that influence Indonesian and Malaysian students' intentions to purchase environmentally friendly clothing. By using the theory of planned behavior and adding one additional variable, namely social media marketing, this study found that attitudes, perceived behavioral control, subjective norms, and social media marketing significantly influence students' intentions to purchase eco-friendly clothing. The most variable influence on green purchase intent is attitude, followed by social media marketing, perceived behavioral control, and subjective norms. The results of this study also indicated that subjective norms insignificantly moderate the relationships between attitude and perceived behavioral control on green purchase intention toward eco-friendly clothing.

Recommendations

Future studies can consider several avenues to improve on this study's limitations. Firstly, this research combines two populations from two countries, namely Indonesia and Malaysia. The rationale for this approach stems from several studies (Chrisniyanti & Fah, 2022; Jain, 2020; Husain et al., 2022; Lee et al., 2019; Yang et al., 2022) that highlight the importance of reaching a larger sample size. We hope that future research will conduct a comparative cross-cultural study, which can significantly enhance our understanding of important consumption behaviors. Second, this research introduces a novel variable, namely social media marketing, into the analysis. Future studies could consider incorporating the construct of purchase behavior and incorporating mediators and/or moderators into the model to provide a more comprehensive understanding of the purchase intention and behavior related to eco-friendly clothing. Furthermore, the research concentrated on the intention to purchase environmentally friendly products rather than the actual purchasing behavior. We could conduct additional research to examine the purchase behaviors of green products to gain a more comprehensive understanding of the trends in actual purchase decisions.

References

1) Abeysekera, I., Manalang, L., David, R., & Grace Guiao, B. (2022). Accounting for Environmental Awareness on Green Purchase Intention and Behaviour: Evidence from the Philippines. *Sustainability (Switzerland)*, *14*(19), 1–20. https://doi.org/10.3390/su141912565

2) Abrar, M., Baig, S. A., Bashir, M., Shabbir, R., & Ayub, M. (2018). Consumer attitude and purchase intention towards organic textile products. *Amazonia Investiga*, *7*(17), 472–485.

3) Abrar, M., Sibtain, M. M., & Shabbir, R. (2021). Understanding purchase intention towards eco-friendly clothing for generation Y & Z. *Cogent Business and Management*, *8*(1), 1–20. https://doi.org/10.1080/23311975.2021.1997247

4) Adnan, A., Ahmad, A., & Khan, M. N. (2017). Examining the role of consumer lifestyles on ecological behavior among young Indian consumers. *Young Consumers*, *18*(4), 348–377. https://doi.org/10.1108/YC-05-2017-00699

5) Ajzen, I. (2012). The theory of planned behavior. *Handbook of Theories of Social Psychology: Volume 1*, 438–459. https://doi.org/10.4135/9781446249215.n22

6) Al-Swidi, A., Huque, S. M. R., Hafeez, M. H., & Shariff, M. N. M. (2014). The role of subjective norms in theory of planned behavior in the context of organic food consumption. *British Food Journal*, *116*(10), 1561–1580. https://doi.org/10.1108/BFJ-05-2013-0105

7) Ansu-Mensah, P. (2021). Green product awareness effect on green purchase intentions of university students': an emerging market's perspective. *Future Business Journal*, *7*(1). https://doi.org/10.1186/s43093-021-00094-5

8) Arifani, V. M., & Haryanto, H. (2018). Purchase intention: Implementation theory of planned behavior (Study on reusable shopping bags in Solo City, Indonesia). *IOP Conference Series: Earth and Environmental Science*, *200*(1), 1–7. https://doi.org/10.1088/1755-1315/200/1/012019

9) Arli, D., Tan, L. P., Tjiptono, F., & Yang, L. (2018). Exploring consumers' purchase intention towards green products in an emerging market: The role of consumers' perceived readiness. *International Journal of Consumer Studies*, *42*(4), 389–401. https://doi.org/10.1111/ijcs.12432

10) Baiquni, A. M., & Ishak, A. (2019). The green purchase intention of Tupperware products: the role of green brand positioning. *Jurnal Siasat Bisnis*, *23*(1), 1–14. https://doi.org/10.20885/jsb.vol23.iss1.art1

11) Bedard, S. A. N., & Tolmie, C. R. (2018). Millennials' green consumption behaviour: Exploring the role of social media. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1388–1396. https://doi.org/10.1002/csr.1654

12) Chen, C. C., Chen, C. W., & Tung, Y. C. (2018). Exploring the consumer behavior of intention to purchase green products in Belt and Road countries: An empirical analysis. *Sustainability (Switzerland)*, *10*(3). https://doi.org/10.3390/su10030854

13) Cheung, H., Mazerolle, L., Possingham, H. P., Tam, K. P., & Biggs, D. (2020). A methodological guide for translating study instruments in cross-cultural research: Adapting the 'connectedness to nature' scale into Chinese. *Methods in Ecology and Evolution*, *11*(11), 1379–1387. https://doi.org/10.1111/2041-210X.13465

14) Cheung, M. L., Pires, G., & Rosenberger, P. J. (2020). The influence of perceived social media marketing elements on consumer–brand engagement and brand knowledge. *Asia Pacific Journal of Marketing and Logistics*. https://doi.org/doi.org/10.1108/

15) Chrisniyanti, A., & Fah, C. T. (2022). the Impact of Social Media Marketing on Purchase Intention of Skincare Products Among Indonesian Young Adults. *Eurasian Journal of Social Sciences*, *10*(2), 68–90. https://doi.org/10.15604/ejss.2022.10.02.001

16) Hair, J. F., Ringle, C. M., Sarstedt, M., Hair, J. F., Ringle, C. M., & Sarstedt, M. (2014). *PLS-SEM : Indeed a Silver Bullet PLS-SEM : Indeed a Silver Bullet*. *January 2015*, 37–41. https://doi.org/10.2753/MTP1069-6679190202

17) Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., Ray, S., Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). An introduction to structural equation modeling. *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook*, 1–29.

18) Han, T. I. (2018). Determinants of organic cotton apparel purchase: A comparison of young consumers in the U.S.A. and South Korea. *Sustainability (Switzerland)*, *10*(6). https://doi.org/10.3390/su10062025

19) Hasan, M. M., Cai, L., Ji, X., & Ocran, F. M. (2022). Eco-Friendly Clothing Market: A Study of Willingness to Purchase Organic Cotton Clothing in Bangladesh. *Sustainability (Switzerland)*, *14*(8), 1–14. https://doi.org/10.3390/su14084827

20) Hasan, M. N. U., Liu, C., & Ahmed, B. (2021). Organic Cotton Clothing Purchase Behavior: A Comparative Study of Consumers in the United States and Bangladesh. *Textiles*, *1*(2), 376–386. https://doi.org/10.3390/textiles1020019

21) Hasbullah, N. N., Sulaiman, Z., Mas'od, A., & Ahmad Sugiran, H. S. (2022). Drivers of Sustainable Apparel Purchase Intention: An Empirical Study of Malaysian Millennial Consumers. *Sustainability (Switzerland)*, *14*(4). https://doi.org/10.3390/su14041945

22) Hideki, E. (2015). Dynamics of the textiles & apparel industries in Southeast Asia: a preliminary analysis. *Journal of International Economic Studies*, *29*, 85–106.

23) Huang, H. (2016). Media use, environmental beliefs, self-efficacy, and pro-environmental behavior. *Journal of Business Research*, *69*(6), 2206–2212. https://doi.org/10.1016/j.jbusres.2015.12.031

24) Husain, R., Ahmad, A., & Khan, B. M. (2022). The impact of brand equity, status consumption, and brand trust on purchase intention of luxury brands. *Cogent Business and Management*, *9*(1), 1–20. https://doi.org/10.1080/23311975.2022.2034234

25) Jain, S. (2020). Assessing the moderating effect of subjective norm on luxury purchase intention: a study of Gen Y consumers in India. *International Journal of Retail and Distribution Management*, *48*(5), 517–536. https://doi.org/10.1108/IJRDM-02-2019-0042

26) Kamalanon, P., Chen, J. S., & Le, T. T. Y. (2022). "Why do We Buy Green Products?" An Extended Theory of the Planned Behavior Model for Green Product Purchase Behavior. *Sustainability (Switzerland)*, *14*(2). https://doi.org/10.3390/su14020689

27) Lee, J. E., Goh, M. L., & Mohd Noor, M. N. Bin. (2019). Understanding purchase intention of university students towards skin care products. *PSU Research Review*, *3*(3), 161–178. https://doi.org/10.1108/prr-11-2018-0031

28) Mai, N. T. T., & Linh, N. H. (2017). Antecedents of the intention and behavior toward purchase of counterfeit luxury goods in an emerging economy: A study of young Vietnamese consumers. *Organizations and Markets in Emerging Economies*, *8*(2), 207–224. https://doi.org/10.15388/omee.2017.8.2.14189

29) Masukujjaman, M., Wang, C. K., Alam, S. S., Lin, C. Y., Ho, Y. H., & Siddik, A. B. (2023). Green Home Buying Intention of Malaysian Millennials: An Extension of Theory of Planned Behaviour. *Buildings*, *13*(1). https://doi.org/10.3390/buildings13010009

30) McNeill, L., & Venter, B. (2019). Identity, self-concept and young women's engagement with collaborative, sustainable fashion consumption models. *International Journal of Consumer Studies*, *43*(4), 368–378. https://doi.org/10.1111/ijcs.12516

31) Mei, N. S., Wai, C. W., & Ahamad, R. (2016). Environmental Awareness and Behaviour Index for Malaysia. *Procedia - Social and Behavioral Sciences*, *222*(07), 668–675. https://doi.org/10.1016/j.sbspro.2016.05.223

32) Moslehpour, M., Ismail, T., Purba, B., & Wong, W. K. (2022). What makes go-jek go in indonesia? The influences of social media marketing activities on purchase intention. *Journal of Theoretical and Applied Electronic Commerce Research*, *17*(1), 89–103. https://doi.org/10.3390/jtaer17010005

33) Muhson, A. (2022). Analisis Statistik Dengan SmartPLS. *Universitas Negeri Yogyakarta*, 1–34.

34) Nekmahmud, M., Naz, F., Ramkissoon, H., & Fekete-Farkas, M. (2022a). Transforming consumers' intention to purchase green products: Role of social media. *Technological Forecasting and Social Change*, *185*(September), 122067. https://doi.org/10.1016/j.techfore.2022.122067

35) Nekmahmud, M., Naz, F., Ramkissoon, H., & Fekete-Farkas, M. (2022b). Transforming consumers' intention to purchase green products: Role of social media. *Technological Forecasting and Social Change*, *185*(October), 122067. https://doi.org/10.1016/j.techfore.2022.122067

36) Ngah, A. H., Gabarre, S., Han, H., Rahi, S., Al-Gasawneh, J. A., & Park, S. H. (2021). Intention to purchase halal cosmetics: Do males and females differ? a multigroup analysis. *Cosmetics*, *8*(1), 1–14. https://doi.org/10.3390/cosmetics8010019

37) Nguyen, M. T. T., Nguyen, L. H., & Nguyen, H. V. (2019). Materialistic values and green apparel purchase intention among young Vietnamese consumers. *Young Consumers*, *20*(4), 246–263. https://doi.org/10.1108/YC-10-2018-0859

38) Saepudin, D., Shojaei, A. S., Barbosa, B., & Pedrosa, I. (2023). Intention to Purchase Eco-Friendly Handcrafted Fashion Products for Gifting and Personal Use: A Comparison of National and Foreign Consumers. *Behavioral Sciences*, *13*(2). https://doi.org/10.3390/bs13020171

39) Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology and Marketing*, *39*(5), 1035–1064. https://doi.org/10.1002/mar.21640

40) Sarstedt, M., Ringle, C. M., & Hair, J. F. (2020). Handbook of Market Research. In *Handbook of Market Research* (Issue July). https://doi.org/10.1007/978-3-319-05542-8

41) Shimul, A. S., Cheah, I., & Khan, B. B. (2022). Investigating Female Shoppers' Attitude and Purchase Intention toward Green Cosmetics in South Africa. *Journal of Global Marketing*, *35*(1), 37–56. https://doi.org/10.1080/08911762.2021.1934770

42) Sousa, S., Correia, E., Viseu, C., & Larguinho, M. (2022). Analysing the Influence of Companies' Green Communication in College Students' Green Purchase Behaviour: An Application of the Extended Theory of Planned Behaviour Model. *Administrative Sciences*, *12*(3). https://doi.org/10.3390/admsci12030080

43) Su, J., Watchravesringkan, K. (Tu), Zhou, J., & Gil, M. (2019). Sustainable clothing: perspectives from US and Chinese young Millennials. *International Journal of Retail and Distribution Management*, *47*(11), 1141–1162. https://doi.org/10.1108/IJRDM-09-2017-0184

44) Sun, Y., & Wang, S. (2020). Understanding consumers' intentions to purchase green products in the social media marketing context. *Asia Pacific Journal of Marketing and Logistics*, *32*(4), 860–878. https://doi.org/10.1108/APJML-03-2019-0178

45) Sun, Y., & Xing, J. (2022). The Impact of Social Media Information Sharing on the Green Purchase Intention among Generation Z. *Sustainability (Switzerland)*, *14*(11). https://doi.org/10.3390/su14116879

46) Tarofder, A. K., Haque, A., Nawaz, N., Raisal, I., Musah, A. A., & Kassim, A. A. M. D. (2023). Determinants of instant messenger (IM) adoption and its effect on team performance: Mediating role of knowledge creation and quality communication. *PLoS ONE*, *18*(11 November), 1–29. https://doi.org/10.1371/journal.pone.0289168

47) Wibowo, S. F., Najib, M., Sumarwan, U., & Asnawi, Y. H. (2022). Rational and Moral Considerations in Organic Coffee Purchase Intention: Evidence from Indonesia. *Economies*, *10*(12). https://doi.org/10.3390/economies10120308

48) Witek, L., & Kuźniar, W. (2021). Green purchase behavior: The effectiveness of sociodemographic variables for explaining green purchases in emerging market. *Sustainability (Switzerland)*, *13*(1), 1–18. https://doi.org/10.3390/su13010209

49) Yang, Q., Hayat, N., Mamun, A. Al, Makhbul, Z. K. M., & Zainol, N. R. (2022). Sustainable customer retention through social media marketing activities using hybrid SEM-neural network approach. *PLoS ONE*, *17*(3 March), 1–24. https://doi.org/10.1371/journal.pone.0264899

50) Yuan, Z., Deng, X., Ding, T., Liu, J., & Tan, Q. (2023). Factors influencing secondary school teachers' usage behavior of dynamic mathematics software: A partial least squares structural equation modeling (PLS-SEM) method. *Electronic Research Archive*, *31*(9), 5649–5684. https://doi.org/10.3934/era.2023287