

Impact of Green Food Buying Behavior: An Explanation with Extended Theory of Planned Behavior

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ABSTRACT

This study aims to examine the impact of green food purchasing behavior by applying an expanded Theory of Planned Behavior (TPB). The research focuses on understanding the determinants that influence consumers' decision to purchase green food products. Data was collected through a survey of 367 respondents who regularly purchase food products, with a focus on those who show interest in green or environmentally friendly options. The results showed that attitude toward green products, subjective norms, and perceived behavior control significantly influence green purchase behavior. In addition, environmental concern and environmental knowledge also have a positive and significant impact on green purchase intention. These findings suggest that the extended Theory of Planned Behavior (TPB) framework provides a more comprehensive understanding of green food purchase decisions. This research contributes to the literature by integrating additional factors into the (Theory of Planned Behavior - TPB), offering insights for policy makers and marketers to promote green food consumption. This study highlights the importance of raising environmental awareness and health benefits to encourage sustainable consumer behavior.

Keywords - Attitude Toward Green Product, Environmental Concern, Environmental Knowledge, Green Purchase Intention, Green Purchase Behavior, Theory of Planned Behavior (TPB).

1. INTRODUCTION

According to Kamalanon *et al.* (2022) environmentally friendly consumers may choose to buy environmentally friendly products to minimize pollution and reduce the global environmental crisis. According to Masukujjaman *et al.* (2023) due to the discharge of waste into seawater and land the environment has changed dramatically, which has affected the economic status of people and their livelihoods. Uncontrolled discharge of waste into seawater and land that does not comply with environmental standards has created serious problems, including pollution of seawater, damage to land, damage to fish resources and the main source of human food. Marine and terrestrial pollution, such as plastic waste, hazardous chemicals and leaking oil, not only damages the marine ecosystem and can also endanger human health.

This shows the awareness and commitment of some consumers in an effort to protect the natural environment, although product purchasing decisions can also be influenced by various other factors such as price, availability, and product information Mal & Nehra. (2023). These findings reflect the importance of environmental education and awareness in driving changes in consumer behavior towards environmental sustainability. In particular, the purchase behavior of environmentally friendly products has three factors that are the main precursors of individual intentions, namely: attitudes, subjective norms, and perceived behavioral control.

This study aims to complement the existing literature by proposing an extended Theory of Planned Behavior (TPB) model through modifications to three relevant aspects. The extended TPB model is expected to make important contributions to the understanding of human behavior in the context under investigation. First, we include environmental issues as an additional relevant antecedent factor in shaping purchase intentions for green products.

In the context of sustainable products, in addition to positive attitudes, subjective norms, and perceived behavioral control, consumers' environmental concerns become variables that have a direct impact on green product purchase intentions. Second, we include corporate green image as a perceived factor in this model, with the aim of exploring its plausible mediating role in driving sustainable product purchase intentions. Third, this study proposes that consumer innovativeness and the level of environmental knowledge may play the role of moderating effects on the relationship between certain variables in this extended TPB model. With these additions and modifications, it is expected that the model will be more comprehensive and relevant in understanding the purchasing behavior of environmentally friendly products. (Papista, 2017)

2. LITERATURE REVIEW

Relationship between Two or More Variables

Green Purchase Behavior

Green purchase behavior refers to the tendency of consumers to choose products or services that are considered environmentally friendly or sustainable (Amoako et al., 2020). Consumers who have green purchase behavior tend to consider the environmental impact of a product, including the production process, the use of raw materials, and the end of the product's life cycle (Naz et al., 2020). Factors such as environmental certification, use of recycled materials, and represent the perceived ease or difficulty of performing the behavior. In ETPB (Extended Theory of Planned Behavior), these factors can be refined or expanded.

The Effect of Attitudes Toward Green Products on Green Purchasing Behavior

The influence of attitude toward green products on green purchase behavior is a relevant topic in recent consumer behavior studies. "Attitude toward green product" refers to an individual's attitude towards green products, such as the extent to which they support, like, or believe in the sustainability and positive environmental impact of the product. While "green purchase behavior" refers to the tendency of individuals to purchase products that are considered environmentally friendly. (E. R. Lestari et al., 2020). The results of the study (Amoako et al., 2020) show that a positive attitude towards green products significantly influences green purchasing behavior. Individuals who have a positive attitude towards green products are more likely to choose these products over conventional products. Factors that influence attitudes towards green products include environmental awareness, personal values, knowledge of environmental issues, perceptions of product quality, and social factors such as pressure from groups or social norms.

However, it is important to remember that attitudes alone are not always sufficient to predict green purchasing behavior. Other factors such as availability, price, relative quality, brand preference and other practical aspects can also influence purchasing decisions. Therefore, it is important for organizations looking to encourage green purchasing behavior to better understand the dynamics of consumer attitudes and behaviors and the factors that influence them. (Akter & Islam, 2020). The results of Troudi & Bouyoucef (2020) research show how attitude towards green products has a direct and positive impact on green purchasing behavior.

H1: Attitude towards green products has a significant positive effect on green purchasing behavior

The Effect of Attitude Toward Green Products on Green Purchase Intention

According to (Thi et al., 2020) prove that attitude towards green products has a positive and significant effect on green purchase intention. With an attitude towards green products, it can be understood as the extent of a person's favorable or unfavorable perception or analysis of how they act when buying green goods because it can affect their intention to buy green goods. Thi et al (2020) show how attitude towards green products has a direct and positive impact on green purchase intention.

H2: Attitude towards green products has a significant positive effect on green purchase intention

The Effect of Subjective Norm on Green Purchase Intention

In the context of green purchase intentions, subjective norm refers to a person's beliefs about whether they approve or disapprove of certain behaviors performed by them, as well as the extent to which they are motivated to follow their opinions. Hamdah et al., (2020). In the context of green purchasing, subjective norm can play an important role in shaping purchase intentions, as individuals' perceptions of approval or disapproval from certain groups or individuals can influence the extent to which they are motivated to adopt environmentally friendly purchasing behavior. Thi et al., (2020) prove that subjective norm has a positive and significant effect on green purchase intention. With the existence of subjective norm, it can be felt to make or not make purchases of environmentally

friendly products because it can affect green purchase intention. Rodrigues & Proença (2023) show how subjective norm has a direct and positive impact on green purchase intention.

H3: Subjective norm has a significant positive effect on green purchase intention.

The Effect of Environmental Concern on Green Purchase Intention

According to (Saari et al., 2021) Environmental concern, in the context of green purchase intention and green purchase behavior, summarizes the level of individual awareness, sensitivity, and commitment to environmental issues. This multi-faceted concept serves as an important determinant in shaping green purchase intentions and subsequent behavior. High environmental concern encourages individuals to prioritize products or services with environmentally friendly attributes, reflecting a conscious effort to align personal values with sustainable choices. The research of Hapsoro, (2023) prove that environmental concern has a positive and significant effect on green purchase intention. With environmental concern, it can show high concern for the environment through concern for the environment, involvement in activities to protect the surrounding environment because it can affect green purchase intention. The research of (Kamalanon et al., 2022) show how environmental concern has a direct and positive impact on green purchase intention.

H4: Environmental concern has a significant positive effect on green purchase intention.

The Effect of Environmental Knowledge on Green Purchase Intention

Environmental knowledge plays an important role in influencing green purchase intention and green purchase behavior Saari et al., (2021). Individuals who have higher levels of environmental knowledge will be more aware of the ecological implications associated with various products and services. Hamzah & Tanwir, (2021) This high awareness contributes to the formation of environmentally conscious attitudes, forming the intention to choose environmentally friendly alternatives during the decision-making process. This study Hapsoro, (2023) prove that environmental knowledge has a positive and significant effect on green purchase intention. With environmental knowledge, it can have more knowledge about recycling than consumers, also through knowledge about products that are safe for the environment. Understand how to choose products that can reduce waste that accumulates at the final production site and recognize the symbols on product packaging because they can affect green purchase intention. The results of Zhuang et al., (2021) show how environmental knowledge has a direct and positive impact on green purchase intention.

H5: Environmental knowledge has a significant positive effect on green purchase intention.

The Effect of Attitude Towards Green Product on Green Purchase Behavior mediated by Green Purchase Intention

Attitude toward green products is an individual's evaluation of environmentally friendly products. Green purchase behavior refers to consumer actions to buy environmentally friendly products. Green purchase intention is an individual's desire to buy environmentally friendly products in the future (D. D. Lestari & Roostika, 2022). Attitude Towards Green Product has a significant influence on Green Purchase Behavior, where this relationship is mediated by Green Purchase Intention. A positive attitude towards green products reflects consumers' belief in the environmental benefits and ethical values of these products, which in turn increases their intention to buy green products (Aitken et al., 2020). The results of the study (Rahlin & Gualin, 2023) prove that attitude towards green products has a positive and significant effect on green purchase behavior which is mediated by green purchase intention.

H6: Attitude towards green products has a significant positive effect on green purchase behavior which is mediated by green purchase intention.

The Effect of Subjective Norm on Green Purchase Behavior mediated by Green Purchase Intention

(Naim & Sobaih, 2023) prove that subjective norm has a positive and significant effect on green purchase behavior which is mediated by green purchase intention. Green purchase intention is the willingness of consumers to choose products or services that are environmentally friendly and sustainable. This concept reflects the conscious and proactive efforts of individuals to consider the environmental impact of their purchasing decisions Zhuang et al., (2021). With mediation, the intention of the buyer will be more directed from independent and dependent. The results of (Masukujjaman et al., 2023) show how subjective norm has a direct and positive impact on green purchase behavior which is mediated by green purchase intention.

H7: Subjective norm has a significant positive effect on green purchase behavior mediated by green purchase intention.

The Effect of Perceived Behavior Control on Green Purchase Behavior mediated by Green Purchase Intention

Perceived behavior control (PBC) addresses people's expectations about how easy or difficult it is to perform a desired behavior in various contexts, especially when the activity exceeds monitorable features Bin-Nashwan et al., (2021). In other words, PBC relates to a person's self-confidence in their capacity and expertise to accurately perform the activity under consideration La Barbera & Ajzen, (2021). The results of the study Nekomahmud & Fekete-Farkas, (2020) prove that perceived behavior control has a positive and significant effect on green purchase behavior which is mediated by green purchase intention. With mediation Sharma et al., (2020), then the behavioral control that people feel will have more intention to buy environmentally friendly food products. The results of Troudi & Bouyoucef, (2020) show how perceived behavior control has a direct and positive impact on green purchase behavior which is mediated by green purchase intention.

H8: Perceived behavior control has a significant positive effect on green purchase behavior mediated by green purchase intention.

The Effect of Environmental Concern on Green Purchase Behavior Mediated by Green Purchase Intention

According to (Rahlin & Gualin, 2023) Environmental Concern has a significant influence on Green Purchase Behavior, where this relationship is mediated by Green Purchase Intention. When individuals have a high level of concern for the environment, they tend to pay more attention to the environmental impact of their consumption choices. With the mediator between environmental concern and green purchase behavior, the emergence of behavior towards environmentally friendly food products will increase more than before. The results of (Naz et al., 2022) show how environmental concern has a direct and positive impact on green purchase behavior which is mediated by green purchase intention.

H9: Environmental concern has a significant positive effect on green purchase behavior which is mediated by green purchase intention.

The Effect of Environmental Knowledge on Green Purchase Behavior Mediated by Green Purchase Intention

The results of the study (Waris & Ahmed, 2020) prove that environmental knowledge has a positive and significant effect on green purchase behavior which is mediated by green purchase intention. With mediation, there will be an intention to learn about environmentally friendly products and can reduce waste that accumulates because it can affect green purchase behavior. The results of (Singh et al., 2021) show how environmental knowledge has a direct and positive impact on green purchase behavior mediated by green purchase intention (Sun et al., 2022).

H10: Environmental Knowledge has a significant positive effect on green purchase behavior mediated by green purchase intention.

Considering the above explanation, the research model can be described as follows:

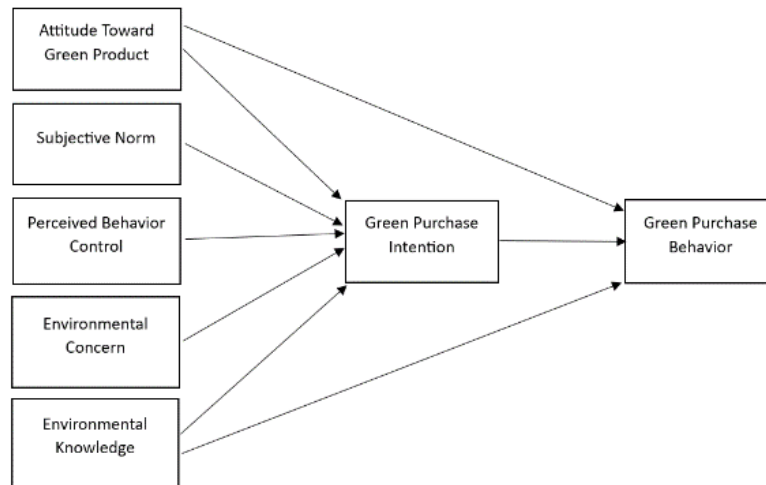


Figure 1. Empirical Research Method

3. RESEARCH METHODS

This research uses quantitative methods. Quantitative methods are research approaches that focus on collecting and analyzing numerical data to identify patterns, relationships, and trends in a phenomenon. Quantitative data is usually obtained through surveys, questionnaires, experiments, or secondary data that can be calculated and analyzed statistically. This study explains the relationship between independent, mediating, and dependent variables. There are five independent variables, namely Attitude toward green products, Subjective norm, Perceived behavior control, Environmental concern, and Environmental knowledge. There is one mediating and dependent variable, namely green purchase intention and green purchase behavior. Based on (Hair et al., 2020), the target sample size is 180 respondents.

The data collection technique used is distributing questionnaires, where researchers interact directly with respondents through distributing questionnaires to obtain the information needed. Respondents were obtained through the distribution of Google Forms which were distributed digitally through social media. The number of questionnaire statements in this study has 29 statements. The questionnaire measurement uses a five Likert scale assessment from 1 (strongly disagree) to 5 (strongly agree). Researchers used the SmartPLS version 3.0 system and SPSS version 26 to analyse the data in this study. PLS can also be used to test hypothesis models to determine the suitability between the independent variable and the dependent variable. When the relationship or model variables are changed, the PLS-SEM model estimates change (Debra Indriani et al., 2019)

4. RESULTS AND DISCUSSION

The analysis and quality assessment of the measurement model was conducted with Smart PLS 3.0 was used. Hox, (2021) The convergent and discriminant validity of the model was evaluated through the use of confirmatory factor analysis (CFA), Cronbach alpha (CA), composite reliability (CR), and AVE. The Cronbach alpha (CA) reliability test results show a value of .828 on the attitude toward green product variable, .802 on the environmental concern variable, .777 on the environmental knowledge variable, .827 on the green purchase behavior variable, .817 on the green purchase intention variable, .856 on the perceived behavior control variable, and 0.766 on the subjective norm variable. The Cronbach alpha value on this research variable is declared reliable, because it is more than 0.7 Peterson, (1994). The composite reliability test results show a value of .884 on the attitude toward green product variable, .870 on the environmental concern variable, .856 on the environmental knowledge variable, .881 on the green purchase behavior variable, .881 on the green purchase intention variable, .897 on the perceived behavior control variable, and .850 on the subjective norm variable. The composite reliability value on the research variables is declared reliable, because it is more than 0.7. The acceptable AVE test result is .50. An AVE of .50 or higher indicates that the structure explains fifty percent or more of the variation in the indicators that make up the structure. If the AVE is less than .50, the structure may not explain as much as fifty percent of the variation in the indicators used. In such a situation, the construct is not valid to explain the relationship between the indicators used. All indicators are acceptable as they have values greater than .50.

Attitude towards green products (ATGP) has a significant positive effect on green purchase behavior (GPB) (path coefficients = .173, t-value = 3.275), the results of Amoako et al., (2020) H1 show that a positive attitude towards green products significantly influences green purchasing behavior. Individuals who have a positive attitude towards green products are more likely to choose these products over conventional products. Attitude towards green products (ATGP) has a positive and significant effect on green purchase intention (GPI) (path coefficients = .111, t-value = 3.832), with the attitude towards green products, H2 can be understood as the extent of a person's favorable or unfavorable perception or analysis of how they act when buying green goods because it can affect their intention to buy green goods Thi et al., (2020). Subjective norm (SN) has an insignificant effect with green purchase intention (GPI) and the relationship between the two variables is negative (path coefficients = -.001, t-value = .106), it shows that H3 there is no significant relationship between factors that influence individuals' perceptions of social norms related to green purchasing behavior and their intention to make such purchases. Kamalanon et al., (2022). Environmental concern (EC) has a significant positive effect on green purchase intention (GPI) (path coefficients = .152, t-value = 3.036), the results of research Hapsoro, (2023) prove H4 that environmental concern has a positive and significant effect on green purchase intention. With environmental concern, it can show high concern for the environment through concern for the environment, involvement in activities to protect the surrounding environment because it can affect green purchase intention. Environmental knowledge (EK) has a significant positive effect on green purchase intention (GPI) (path coefficients = .586, t-value = 12.513), in H5 (Saari et al., 2021) this knowledge helps consumers identify the benefits of green products, such as a reduced carbon footprint or the use of recyclable materials, thus encouraging the intention to buy these products.

The effect of attitude toward green product on green purchase behavior mediated by green purchase intention (path coefficients = .014, t-value = 2.776), Attitude Towards Green Product has a significant effect on Green Purchase Behavior, where this relationship is mediated by Green Purchase Intention. In H6, a positive attitude towards green products reflects consumers' belief in the environmental benefits and ethical values of these products, which in turn increases their intention to buy green products Aitken et al., (2020). The effect of subjective norm on green purchase behavior mediated by green purchase intention (path coefficients = -.001, t-value = .105), subjective norm has a positive insignificant effect on green purchase behavior, where this relationship is mediated by green purchase intention and indicates that the relationship of the independent variable to the dependent through the mediating variable is expressed negatively. In H7 this negative attitude can be caused by various factors, such as a lack of knowledge or trust in green products, stronger personal preferences, or practical barriers such as higher prices and product availability. Although individuals may have good intentions to purchase green products due to social encouragement, these factors may be more dominant in influencing their final behavior. Kamalanon et al., (2022). The effect of perceived behavior control on green purchase behavior mediated by green purchase intention (path coefficients = .055, t-value = 2.931), perceived behavior control has a significant effect on green purchase behavior, where this relationship is mediated by green purchase intention. In H8 positive attitudes towards green products indicate that when individuals feel they have control or the ability to make green product purchases, they are more likely to have the intention to make these purchases. Green Purchase Intention then acts as a strong mediator, strengthening the relationship between perceived behavioral control and actual green purchase actions. Troudi & Bouyoucef, (2020). The effect of environmental concern on green purchase behavior mediated by green purchase intention (path coefficients = .055, t-value = 2.331), environmental concern has a significant effect on green purchase behavior, where this relationship is mediated by green purchase intention. In H9, positive attitudes towards green products have a high level of concern for the environment, they tend to pay more attention to the environmental impact of their consumption choices. With the mediator between environmental concern and green purchase behavior, the emergence of behavior towards environmentally friendly food products will increase more than before. Rahlin & Gualin, (2023). The effect of environmental knowledge on green purchase behavior mediated by green purchase intention (path coefficients = .209, t-value = 4.149). environmental knowledge has a significant effect on green purchase behavior, where this relationship is mediated by green purchase intention. In H10, a positive attitude towards green products with mediation, there will be an intention to learn about environmentally friendly products and can reduce accumulated waste because it can affect green purchase behavior.

The R-square test in smartPLS is a method to measure how well the structural model built explains variations in endogenous variables. A high R-square test result indicates that the exogenous variables in the model effectively explain the variability in the endogenous variables, so the model has a better fit with the observed empirical data.

Table 1. R Square

Variable	R Square
Green Purchase Behavior	.215
Green Purchase Intention	.698

source: processed data pls 2024

AVE: $(0.656 + 0.627 + 0.598 + 0.650 + 0.650 + 0.637 + 0.587)/7 = 4.405/7 = 0.629$

R square: $(0.215 + 0.698)/2 = 0.913/2 = 0.457$

$\sqrt{0.629 \times 0.457} = 0.536$

The results of the calculation of the Goodness of Fit (GoF) Index in this study show a value of 0.536, which is in accordance with the criteria Hair et al., (2019) and is included in the "Strong" category. A high GoF value indicates that the structural model developed in this study can clearly describe the empirical data. This shows that latent variables are used to measure variables. Based on the GoF Index results, it can be concluded that the selected latent variables have a significant influence on explaining green purchase behavior.

Table 5. Goodness of Fit (GoF)

Variable	AVE	R Square
Attitude Toward Green Product	0.656	
Environmental Concern	0.627	
Environmental Knowledge	0.598	
Green Purchase Behavior	0.650	0.215
Green Purchase Intention	0.650	0.698
Perceived Behavior Control	0.637	
Subjective Norm	0.587	

source: processed data pls 2024

5. CONCLUSION

This study aims to examine the impact of green food purchasing behavior by applying an expanded Theory of Planned Behavior (TPB). The research focuses on understanding the determinants that influence consumers' decision to purchase green food products. Data was collected through a survey of 387 respondents who regularly purchase food products, with a focus on those who show interest in green or environmentally friendly options. The results showed that attitude toward green products, subjective norm, and perceived behavior control significantly influence green purchase behavior. In addition, environmental concern and environmental knowledge also have a positive and significant impact on green purchase intention. The results suggest that the extended TPB provides a better understanding of green food purchases. Positive attitude, social support, and self-confidence are the main factors, with the additional importance of environmental and health awareness. The practical implication is the importance of increasing environmental and health awareness through effective educational campaigns and marketing strategies. Social support and increased consumer confidence are also crucial. This research provides guidance for policy and marketing strategies to support sustainable and environmentally friendly consumption.

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