Eco-Friendly Product Purchase Behavior Model: Application of Theory of Planned Behavior in Generation Z Consumers

Ade Octavia[1], Yayuk Sriayudha[2], Musnaini Musnaini[3]
[1]Faculty of Economics and Business, Jambi University, Indonesia, ade_octavia@unja.ac.id
[2]Faculty of Economics and Business, Jambi University, Indonesia, yayuk.sriayudha@unja.ac.id
[3]Faculty of Economics and Business, Jambi University, Indonesia, musnaini@unja.ac.id

Corresponding Author: yayuk.sriayudha@unja.ac.id[2]

Abstract: The use of environmentally friendly (eco-friendly) products is the best solution for maintainingenvironmental sustainability. The consumption behavior of Generation Z can be a starting pointthat has an important role if these young buyers actively contribute to promoting sustainable economic development and purchasing eco-friendly products. This study aimed to analyze (1) the relationship between consumer attitudes, subjective norms, and perceived controls with thepurchase intention of eco-friendly products in generation Z consumers, and (2) the relationship between the purchase intention of eco-friendly products and eco-friendly product purchase behavior in generation Z consumers. The approach used was explanatory research with a quantitative analysis research method. The study population was Generation Z consumers in Jambi with a sample of 200 respondents. Non-probability sampling technique was used to select research samples. The instrument used was a research questionnaire. The data were analyzed using the Structural Equation Model (SEM/PLS) with the smartPLS analysis tool. The results showed that consumer attitudes have a significant effect on the purchase intention of eco-friendly products in Generation Z consumers. Whereas, subjective norms have no effect on the purchase intention of eco-friendly products in Generation Z consumers. Furthermore, there is a positive effect between behavioral controls and the purchase intention of eco-friendly products in Generation Z consumers. The purchase intention of Generation Z consumers has an effect on eco-friendly product purchase behavior. The results of this study are expected to be implemented in order to maintain environmental sustainability and a green economy as wellas to contribute and become reference literature for academics, universities, local governments,consumers, and business actors.

Keyword: Eco-Friendly, Generation Z, Consumers, Purchase Behavior, TPB

INTRODUCTION

Consumer awareness of environmentally friendly (eco-friendly) products in today's world is increasingly popular. This trend is triggered by increasing customer concerns about conventionally produced products that are produced with additives that damage the

environment, and in the long run, can cause health problems (Alamsyah et al., 2021). Surveys show that environmentally conscious consumers rate eco-friendly products higher than traditional products (Zhang et al., 2019). Consumers become interested in eco-friendly products and in response, they change their shopping lists and tend to purchase products that are considered eco-friendly (Yenipazarli & Vakharia, 2015).

Previous studies have shown that people in developed countries such as the United States and Germany are very supportive of the idea and take positive action to buy branded products that are eco-friendly (Chandra et al., nd). On the other hand, Asian consumers are increasingly aware of the pressing environmental issues in a fast-growing global economy (Lai & Cheng, 2016). This has also awakened developing countries to move towards eco-friendly consumption to support the environmental conservation movement. The point that explors the effect of green marketing on purchase behavior in emerging Asian markets is considered timely and important. This determination causes Indonesia, as one of the countries in Asia, and a developing country in the world, to become more aware of green movements and activities for environmental conservation. In line with this, Indonesia, in the concept of sustainable development, carries three main pillars, namely social, economic, and environmental. These three pillars must work and be implemented in harmony.

Eco-friendly products really provide the best service for their customers with free content from chemicals that harm customers (Alamsyah et al., 2018). The essence of eco-friendly products is how businesses create sustainable value for consumers by providing products and services that are functional and meet the emotional needs of today and future generations while respecting the environment and shared values. Environmentally friendly behaviors and consumer attitudes are important aspects to influence and motivate enthusiasm for shopping for more eco-friendly products. According to (Haque et al., 2020), in production, design, packaging, labeling, and consumption, there is a positive thing about a product with an environmentally friendly purpose. The importance of this study is to understand the factors that inspire consumer behaviors, and companies must study these consumer behaviors. When consumers realize the impact of their consumption that threatens environmental sustainability, consumers will be more responsive to changing consumption patterns in purchasing patterns for eco-friendly products because of their concern and care for environmental sustainability.

The phenomenon of attitudes is always emphasized as the originator of intentions and behaviors. According to (Jaiswal & Kant, 2018), attitudes can be classified into general and special terms, namely general attitudes and special attitudes. The theory of attitude is an important part of the theory of behavior. According to Ajzein (1991), perceived behavioral controls of consumers play an important role. The theory of planned behavior is considered a framework that provides empirical support for understanding the cognitive determinants (Ajzen, 1991) of consumer behaviors. Apart from attitude, the intention is also a significant determinant in various sociopsychological and consumer behavior studies (Shukla, 2019).

Intergenerational differences are one of the topics that are often discussed in the development of human resource management. There are significant differences in characteristics between Gen Z and other generations (Gen X and Gen Y). Generation Z, known as the "Internet Generation" or "Facebook Generation", are people born between 1995 and 2010 (Abrar et al., 2021). It was found that Generation Z has a higher tendency to be socially and economically involved in society. The Generation Z group has the ability to master information and technology, and this has become part of the life of the Generation Z group. This generation is also characterized by more liking for social activities than the previous generations, multi-tasking, being very fond of technology, caring about the environment, and being easily affected by products that are related to the environment. Therefore, it is important to consider this market segment in the study to understand how they behave towards purchasing eco-friendly products.

The Indonesian Political Indicators Survey (IPI) shows that 64 percent of respondents aged

17-26 years old consider environmental issues to be very important issues. The percentage of this age group is the highest among other age groups. The results of a study by Lai & Cheng, 2016 (Lai & Cheng, 2016) stated that young buyers are motivated to actively contribute to increasing sustainable consumption by making green purchases. The study further confirmed that young consumers are generally very interested in consuming pro-environmental products. These data support the statement that the younger generation expresses greater interest in actively participating in social issues, especially compared to Generation Y (Xinhua, 2019).

The results of a study by (Alty Amalia et al., 2021) stated that Generation Z in Indonesia shows positive behaviors toward the consumption of eco-friendly products, especially related to waste which is the main source of environmental problems with the problem of sustainable consumption. Based on the description, this study aimed to analyze the following research questions:

1) How is the relationship between consumer attitudes, subjective norms, and perceived controls with the purchase intention of eco-friendly products in generation Z consumers?

2) How is the relationship between the purchase intention of eco-friendly products and eco-friendly product purchase behavior in generation Z consumers?

METHOD

The research design used was descriptive quantitative in accordance with the problem and research aims. The formation of the initial research model and testing of the model became part of the research design. Data collection used was the sample survey with measurement instruments in the form of a questionnaire. The considerations for choosing this design were the large distribution of respondents, the scattered research locations, and there were hypotheses that required testing. Types and sources of data consisted of primary data and secondary data. The method of collecting primary data was through interviews, questionnaires distribution, direct observations of the research object, and focused discussion on the object and subject of the research. Whereas, the method of collecting secondary data was through the search of scientific publications (national and international scientific journals), proceedings, books, research reports, published data, and seminars or workshops in national and international scientific forums.

The population in this study was Generation Z in Jambi who has consumed or used eco-friendly products. The total population was unknown but could be estimated along with a large number of Generation Z in Indonesia. The statistical model used was the Structural Equation Model (SEM) of Variance with the SmartPLS analysis tool. The study samples were 200 respondents. To produce a convergent model and stable parameter estimates, the number of study samples must be large (Iacobucci, 2010) which suggests the number of sample sizes that are practical for SEM is 200 respondents. The sampling technique used was a non-probability sampling technique by means of purposive sampling. The consumer criteria used as samples were young consumers who were born between 1995 - 2010 and above, male or female, and willing to be respondents.

The analytical tool used was SmartPLS (partial least square). The PLS pathway modeling aims to estimate the variance of the endogenous constructs, and in turn, their respective manifest variables. The measurement model was evaluated by testing individual item reliability, internal consistency or construct reliability, analysis of mean-variance extraction (AVE), and discriminant validity. In PLS, the reliability of individual items is assessed by examining the factor loading, or the simple correlation of an indicator with its respective latent variable. The widely accepted rule of thumb indicates that in order to accept an indicator as a constituent of a construct, the manifest variable must have a loading of 0.707 or more.

The construction between the independent variables and the dependent variable

aswell as the intervening variable in this study is described through the following research model:
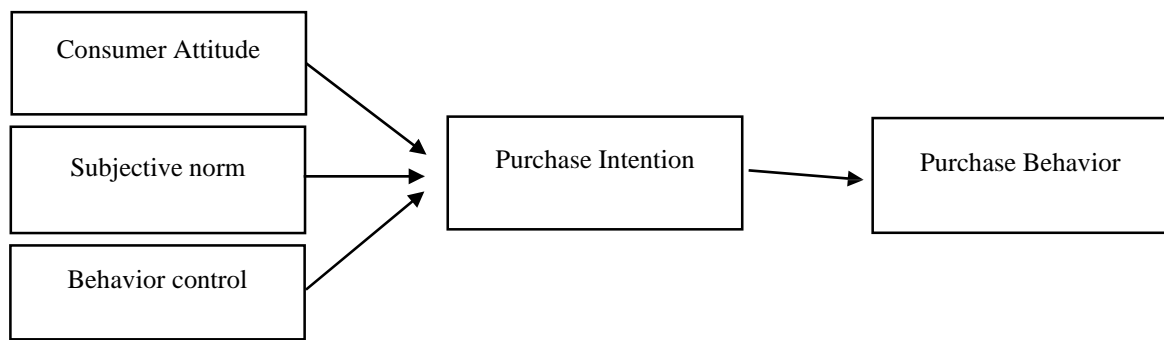
Figure 1. Research Model

RESULTS AND DISCUSSION

Testing of the structural model (inner model) was done by looking at the R-square values as the results of the goodness-fit model test. The R-square values can be seen in the R-square tablefrom the results of the running calculate model.

Table 1. Value of R square

	R Square	Information
Purchase Behavior	0.565	Met the criteria
Purchase Intention	0.652	Met the criteria

Source: Primary data processed 2022

Testing of the structural model on the inner model used the predictive-relevance (Q2) values. The quantity of Q2 has a value range of $0 < Q2 < 1$. The closer to 1 means the better the model. Predictive-relevance values can be obtained using the following formulations and calculations:

$Q2 = 1 - (1 - R12)(1 - R22)$

$Q2 = 1 - (1 - 0.5652)(1 - 0.6522)$

$Q2 = 1 - (0.681) - (0.575)$

$Q2 = 0.256$

The result of the calculation of the predictive-relevance value of 0.256 or 20.56 percent show that the diversity of data that can be explained by the model is 25.60 percent. The remaining 74.40 percent is explained by other variables that have not been contained in the model. If the value of R square is close to 1, the effect between the independent and dependent variables will be stronger.

Significance (Hypothesis Testing)

Hypothesis testing in this study aimed to establish a basis so that it could collect evidence in the form of data in determining whether to reject or accept the truth of the statements or assumptions that have been made. The second model was then run and the following bootstrapping model was obtained:
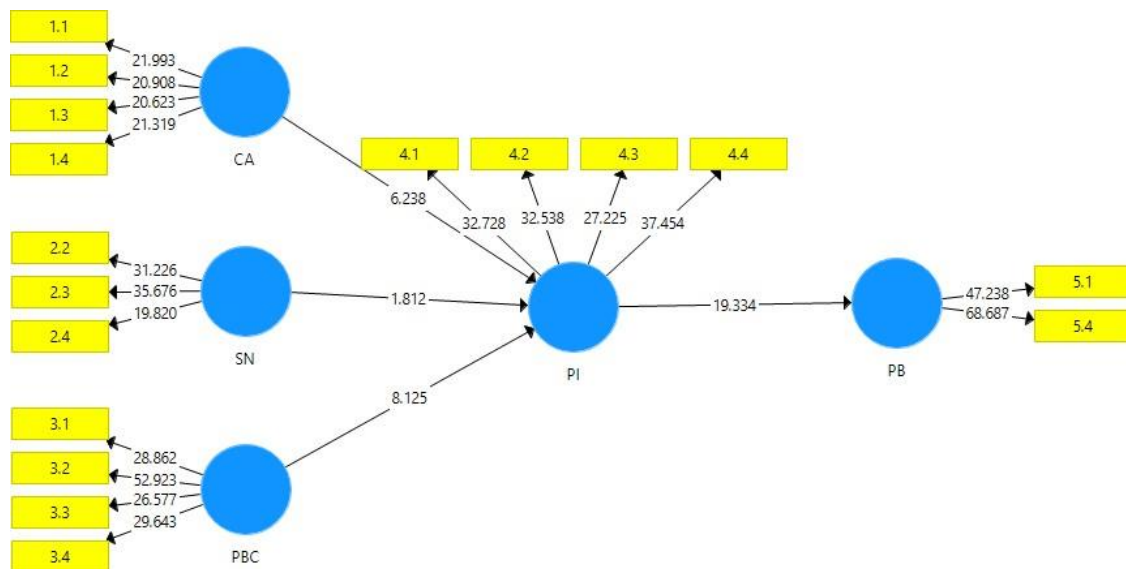
Figure 2. Bootstrapping

Table 2. Path Coefficients Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Information Hypothesis
Behavior Controls -> Purchase Intentions	0.423	0.425	0.052	8.125	0.000	Accepted
Purchase Intentions->Purchase Behavior	0.751	0.756	0.039	19,334	0.000	Accepted
Consumer Attitudes->Purchase Intentions	0.429	0.428	0.069	6,238	0.000	Accepted
Subjective Norms -> Purchase Intentions	0.100	0.101	0.055	1,812	0.071	Rejected

Source: Primary Data processed 2022

    The hypotheses in this study can be seen from the calculation of the model using the PLS bootstrapping technique. From the results of the bootstrapping calculation, a statistical T value will be obtained for each relationship or path. This hypothesis testing was set to a significance level of 0.05 and one-way (1-tailed). The hypothesis can be accepted if the value of T statistic is greater than 1.64 (Jogiyanto, 2011). Based on the results of data processing, the significance level of the relationship between consumer attitudes and purchase intention is less than 0.05. Hypothesis 1.a is accepted, as the T statistic value of 6.238 >1.64 shows that consumer attitudes have a significant effect on the purchase intention of eco-friendly products in Generation Z consumers. According to (Jaiswal & Kant, 2018), attitude phenomena are always emphasized as one of the imperative antecedent variables of intentional behavior and actual behavior in consumer psychology of eco-friendly products. Generation Z who are more aware of environmental issues will take positive action by refusing to use and consume products that have a negative impact on the environment. It was found that this generation has a stronger sense of responsibility and concern. Thus, their behavior about green consumption will be strengthened. This is in line with the results of a study by (Kautish & Sharma, 2019) that young consumers have a concern for the environment. These young people have different environmental values, due to greater self-confidence and stronger conscientious behavior. Young people tend to have more positive attitudes toward the environment than their parents and previous generations. Because Generation Z has a unique character and is different from

other generations, identifying the factors affecting Generation Z's attitude toward purchasing eco-friendly products is necessary to make a behaviorally relevant approach.

The next research question is how subjective norms affect the purchase intention of eco-friendly products and eco-friendly product purchase behavior in generation Z consumers. The significance value of 0.071 is greater than the significance level of 0.05—and the T statistic value of 1.812 > 1.64. This means that subjective norms have no effect on the purchase intention of eco-friendly products in Generation Z consumers. So it can be concluded that hypothesis 1.b cannot be proven empirically. The results of this study indicate that generation Z consumers are a group of consumers who are able to decide everything on their own without the involvement of opinions or suggestions from their family or closest people. In terms of using eco-friendly products, Generation Z in this study is fully aware of their role in preserving the environment by not buying and using products that are not pro-environmental. The results of this study are not in line with the results of a study by Ajzein (1991) that belief norms are behaviors that are lived based on what other people think and whether someone will do what others do. The theory of planned behavior (Ajzein, 1991) predicts that subjective norms will affect consumers' purchase intentions but apart from that, consumers who come from certain age groups may have other triggers in determining product purchase intentions. Generation Z has a realistic, pragmatic, and independent character. This group is more comfortable working alone and independently—and solves problems in a 'Do-it-yourself' way. So, in purchasing decisions they tend to decide for themselves and do not ask for advice or input from those closest to them.

This study analyzed the relationship between perceived behavioral control with the purchase intention of eco-friendly products in Generation Z consumers. The significance value of 0.000 and the T value of 8.125 indicate that there is an effect of behavioral controls on the purchase intention of eco-friendly products in Generation Z consumers. Behavioral control is a consequence of human behavior whether it is liked or disliked. The review argues that individual may want to take an action, or may withdraw due to some situational constraints. A person's personality traits, such as self-confidence and self-efficacy, or their beliefs determine the purchase behavior of Generation Z. According to the results of a study by (Mohiuddin et al., 2018), consumer behavior controls affect the purchase intention of eco-friendly products. The researchers stated that understanding consumer actions can be enhanced by behavioral controls as a predictive factor when included in behavioral studies.

The next hypothesis testing is how much the purchase intention of Generation Z affects eco-friendly product purchase behavior. The significance value of 0.000 and the T value of 19.33 indicate that the hypothesis is accepted. There is a strong need for eco-friendly products in a changing world market, thus this has also changed the focus of consumer purchases. The urgency to manage environmental issues has been widely known and discussed. The purchase intention of eco-friendly products by Generation Z is described as the possibility that this age group specifically chooses products with eco-friendly features over other traditional products, in their purchase considerations. They prefer to use their own drinking bottles for good activities at school, at work, and at other daily activities compared to buying bottled water. Awareness of purchasing eco-friendly products is also shown by bringing or buying their own shopping bags compared to using plastic bags. The results of this study are in line with the results of a study by (Al-Gasawneh & Al-Adamat, 2020) where green purchase intention is an important aspect of consumers' actual green purchase behavior, and indicates that customers aim to buy eco-friendly products if they are of interest to them.

Understanding Generation Z's purchase behavior helps understand how an individual makes purchasing decisions and what motivates them to make purchases. Because consumer behavior refers to the psychological processes that consumers go through, it is very important to identify their needs and wants, determine how to fulfill those wants, and understand how they make purchasing decisions. Based on the Theory of Planned Behavior by Ajzen (1991), a

person's intention is affected by their attitudes toward behavior, subjective norms, and perceived behavioral controls. So, it is important to know the relationship between them, the factors, and the purchase intention of Generation Z in terms of purchasing eco-friendly products.

CONCLUSION

Generation Z has different behaviors in consuming eco-friendly products. This model found the relationship between variables which includes antecedents and consequences. Based on the test, it was found that variables of attitudes and behavioral controls affect purchase intentions. Whereas, subjective norms have no effect on purchase intention. Furthermore, purchase intention has a significant effect on purchase behavior. It was found that Generation Z has a stronger sense of responsibility and care. Thus, their behaviors regarding green consumption need to be strengthened, through educational programs that are appropriate for the age group and the addition of fashionable eco-friendly products.

REFERENCE

Ajzen, I. (1991), "The theory of planned behavior", Organizational Behavior and Human Decision Processes, Vol. 50 No. 2, pp. 179-211

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). https://doi.org/10.1080/23311975.2021.1997247

Al-Gasawneh, J. A., & Al-Adamat, A. M. (2020). The mediating role of e-word of mouth on the relationship between content marketing and green purchase intention. *Management Science Letters*, *10*(8), 1701–1708. https://doi.org/10.5267/j.msl.2020.1.010

Alamsyah, D. P., Othman, N. A., Bakri, M. H., Udjaja, Y., & Aryanto, R. (2021). Green awareness through environmental knowledge and perceived quality. *Management Science Letters*, *11*, 271–280. https://doi.org/10.5267/j.msl.2020.8.006

Alamsyah, D. P., Syarifuddin, D., & Mohammed, H. A. A. (2018). Green Customer Behavior on Eco-Friendly Products: Innovation Approach. *Jurnal Dinamika Manajemen*, *9*(2), 159–169. https://doi.org/10.15294/jdm.v9i2.15386

Alty Amalia, F., Sosianika, A., & Amanda Christabel, F. (2021). Green Purchase Intention of Indonesian Young Consumers: Extending VAB Framework. *Journal of Marketing Innovation*, *1*, 1–17. http://doi.org/10.35313/jmi.v1i01.9

Chandra, W., Rahbar, E., & Wahid, N. A. (n.d.). *Investigation of green marketing tools ' effect on consumers ' purchase behavior Investigation of green marketing tools ' effect on consumers ' purchase behavior*. https://doi.org/10.1108/17515631111114877

Haque, A., Nayeem, A. R., Hossain, M. N., Abdullah, F., & Fatema Akter, M. (2020). Factors affecting on consumer's purchase intention towards eco-friendly products in Malaysia. *Issues in Business Management and Economics*, *8*(4), 72–83. https://doi.org/10.15739/IBME.20.007

Iacobucci, D. (2010). Structural equations modeling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, *20*(1), 90–98. https://doi.org/10.1016/j.jcps.2009.09.003

Jaiswal, D., & Kant, R. (2018). Green purchasing behaviour: A conceptual framework and empirical investigation of Indian consumers. *Journal of Retailing and Consumer Services*, *41*(November 2017), 60–69. https://doi.org/10.1016/j.jretconser.2017.11.008

Johannes, J., Octavia, A., & Suwarti, Y. (2017). the Effect of Hedonic Lifestyle, Hedonic Motivation and Quality of Products To Interest Recycling Tupperware Product in Jambi Cty. *Journal of Business Studies and Mangement Review*, *1*(1), 18–25. https://doi.org/10.22437/jb.v1i1.3918

Kautish, P., & Sharma, R. (2019). Value orientation, green attitude and green behavioral intentions: an empirical investigation among young consumers. *Young Consumers*, *20*(4), 338–358. https://doi.org/10.1108/YC-11-2018-0881

Lai, C. K. M., & Cheng, E. W. L. (2016). Green purchase behavior of undergraduate students in Hong Kong. *The Social Science Journal*, *53*(1), 67–76. https://doi.org/10.1016/j.soscij.2015.11.003

Lin, S. T., & Niu, H. J. (2018). *Green consumption : Environmental knowledge , environmental consciousness , social norms , and purchasing behavior*. *November 2017*, 1–10. https://doi.org/10.1002/bse.2233

Miller, Z. D. (2017). The Enduring Use of the Theory of Planned Behavior. *Human Dimensions of Wildlife*, *22*(6), 583–590. https://doi.org/10.1080/10871209.2017.1347967

Mohiuddin, M., Al Mamun, A., Syed, F. A., Masud, M. M., & Su, Z. (2018). Environmental knowledge, awareness, and business school students' intentions to purchase green vehicles in emerging countries. *Sustainability (Switzerland)*, *10*(5). https://doi.org/10.3390/su10051534

Octavia, A., Hasbullah, H., & Sriayudha, Y. (2020). Development Model of Social Media Marketing – Consumer Loyalty Mediated By Brand Equity and Consumer Response To Fashion Branded Products. *Dinasti International Journal of Digital Business Management*, *2*(1), 20–29. https://doi.org/10.31933/dijdbm.v2i1.633

Octavia, A., & Sriayudha, Y. (2018). the Decision of Visiting and Tourists Behaviour. *Journal of Business Studies and Management Review (JBSMR)*, *1*(2), 66–71.

Ogiemwonyi, O., Harun, A. Bin, Alam, M. N., Karim, A. M., Tabash, M. I., Hossain, M. I., Aziz, S., Abbasi, B. A., & Ojuolape, M. A. (2020). Green product as a means of expressing green behaviour: A cross-cultural empirical evidence from Malaysia and Nigeria. *Environmental Technology and Innovation*, *20*, 101055. https://doi.org/10.1016/j.eti.2020.101055

Rausch, T. M., & Kopplin, C. S. (2021). Bridge the gap: Consumers' purchase intention and behavior regarding sustainable clothing. *Journal of Cleaner Production*, *278*, 123882. https://doi.org/10.1016/j.jclepro.2020.123882

Roza, S., Sriayudha, Y., Khalik, I., Octavia, A., Economic, F., Jambi, U., Economic, F., Jambi, U., Economic, F., Jambi, U., Economic, F., & Jambi, U. (2022). *CONSUMER ATTITUDE TOWARDS ADVERTISING ON INSTAGRAM : THE ROLE OF ADS PERSONALIZATION AND*. *3*(1), 130–140.

Saleem, M. A., Khan, M. A., & Alam, S. (2015). Antecedents Of Green Purchase Intentions: Evidence From Customers Of Electronics Products from Multan District. *European Academic Research*, *II*(11), 14900–14916.

Shukla, S. (2019). A Study on Millennial Purchase Intention of Green Products in India: Applying Extended Theory of Planned Behavior Model. *Journal of Asia-Pacific Business*, *20*(4), 322–350. https://doi.org/10.1080/10599231.2019.1684171

Siddique, M. Z. R., Saha, G., & Kasem, A. R. (2021). Estimating green purchase behavior: an empirical study using integrated behavior model in Bangladesh. *Journal of Asia Business Studies*, *15*(2), 319–344. https://doi.org/10.1108/JABS-04-2019-0120

Sriayudha, Y., & Nifita, A. T. (2014). *Analysis of Preferences and Consumer Behavior of Batik Jambi*. 28–34.

Wu, S.-I., & Chen, Y.-J. (2014). The Impact of Green Marketing and Perceived Innovation on Purchase Intention for Green Products. *International Journal of Marketing Studies*, *6*(5), 81–100. https://doi.org/10.5539/ijms.v6n5p81

Xu, Z., Shan, J., Li, J., & Zhang, W. (2020). Extending the theory of planned behavior to predict public participation behavior in air pollution control: Beijing, China. *Journal of Environmental Planning and Management*, *63*(4), 669–688.

https://doi.org/10.1080/09640568.2019.1603821

Yenipazarli, A., & Vakharia, A. (2015). Pricing, market coverage and capacity: Can green and brown products co-exist? *European Journal of Operational Research*, *242*(1), 304–315. https://doi.org/10.1016/j.ejor.2014.09.039

Zhang, Q., Zhao, Q., & Zhao, X. (2019). Manufacturer's product choice in the presence of environment-conscious consumers: brown product or green product. *International Journal of Production Research*, *57*(23), 7423–7438.https://doi.org/10.1080/00207543.2019.1624853