



THEORY PLANNED BEHAVIOR APPROACH ON PURCHASE INTENTION OF ENERGY-EFFICIENT HOME APPLIANCES, ECO-LITERACY AS MODERATOR

Elistia Elistia¹, Fransiska Deodora², Siti Mariam³

^{1,2, 3}Faculty of Economic and Business, Universitas Esa Unggul, Jakarta, Indonesia
Email: elistia@esaunggul.ac.id¹

Abstract

The activities of human beings have had the effect of worsening the climate of the earth by depleting natural resources and polluting the air, water, and soil. Increasing household electrical appliance growth has increased energy consumption and exacerbated environmental pollution. The behavior of using environmentally friendly household electronic equipment products has become an exciting research topic because it has implications for awareness of the need to target environmentally friendly consumers in purchasing behavior. This study investigates the effect of perceived usefulness, attitude, subjective norms, and perceived behavior control on purchase intention and the moderating effect of eco-literacy concerning energy-saving equipment products. The research method is descriptive causality with a quantitative approach with sample respondents in Jakarta; data were processed and analyzed using Structural Equation Model. The findings of this study indicate that Subjective Norms and Perceived Behavior Control positively affect Purchase Intention. However, Attitude and Perceived Usefulness do not affect purchase intention.

Moreover, Eco-literacy positively moderates Subjective Norms. The research contributes to measuring consumer behavior towards environmentally friendly and electronic energy-efficient home appliances so that they have sustainable implications for the environment. Because of this, one of the essential things businesses can do to maintain sustainable relationships, such as reducing their energy consumption and raising public awareness, is to increase their eco-literacy campaigns.

Keywords: Attitude, Subjective Norms, Perceived Behavior Control, Perceived Usefulness, Eco-Literacy

INTRODUCTION

The behavior of humankind has opposed the earth's climate by exploiting natural resources, polluting the air, soil, and air. The rapid growth in the use of household electrical appliances has now led to significant energy consumption and is against environmental pollution. Equipment that is not energy-efficient can generate electricity that is not conducive to saving energy and reducing emissions (Yadav & Pathak, 2017). Fighting climate change and creating a sustainable environment has become a shared responsibility (Tan et al., 2017). The Indonesian government also sees the increasing importance of implementing the Minimum Energy Performance Standards (SKEM) and the inclusion of energy-saving labels on equipment the public uses. As mandated by Law Number 30 of 2007 concerning Energy in Government Regulation Number 70 of 2009 concerning Energy Conservation which helps conserve domestic energy resources and increase the efficiency of their utilization, standards, and labels are one of the frameworks for energy conservation activities carried out through the application of energy-efficient technologies. The household sector can significantly contribute to environmental preservation and sustainability by using energy-efficient products (Sorrell, 2015; Zhou

& Yang, 2016). Many well-known electronic companies, such as Samsung, Sharp, Cosmos, Sanken, Daikin, and Philips, offer affordable, quality, energy-saving electronic products (Husnul Khotimah, 2020). Researchers are becoming more interested in motivating consumers to be more environmentally friendly (Diaz-Sanchez et al., 2015). Eco-literacy signifies corporate social responsibility. Eco-literacy is an effort to maintain and build sustainable relationships with stakeholders such as nature, society, and consumers. Thus, marketing, including environmentally friendly products and services, is a continuous process and forms attitudes toward environmentally friendly behavior (Rettie et al., 2012).

Previous research on buying interest in energy-efficient household electronic products has been carried out by Ali et al. (2019), Bhutto et al. (2021), and Cho & Sagynov (2015). However, something distinguishes this research from previous research: the addition of perceived usefulness variables associated with buying energy-efficient household electronic products. Therefore, the study aimed to identify and analyze the effect of Perceived Usefulness (PU), Attitude (Att), Subjective Norms (SN), and Perceived Behavior Control (PBC) on Purchase Intention (PI) and moderation of Eco-literacy (EL) on Purchase Intention (PI) for energy-saving electronic products. Theory of Planned Behavior (TPB) states three main components influencing consumer behavior in buying interest: attitudes, subjective norms, and Behavioral Control (Ajzen, 1991). Hopefully, this research can provide theoretical contributions at the scientific level of marketing management and consumer behavior and practical contributions and managerial implications for marketing practitioners in energy-efficient electronic products.

Gadenne et al. (2011) found that environmental attitudes directly affect households' green buying, recycling, and environmental habits. There are several previous studies on the effect of attitudes on purchase intention, such as research from Bhutto et al. (2021); Hua & Wang (2019); Rosalina & Wati (2020); Waris & Ahmed (2020); Yadav & Pathak, (2017) states that the attitude variable has a significant influence on purchase intention. H1: Attitude positively affects purchase intention.

SN is individuals' social pressure to act or not to do it (Prete et al., 2017). It refers to the "social pressure" experienced by individuals and perceptions about the behavior of reference groups around them, such as family, friends, or co-workers. There are several previous studies on the effect of SN on PI, such as research from Bhutto et al. (2021); Hua & Wang (2019); Reyes-Mercado, (2017); dan Waris & Ahmed (2020) stated that the subjective norms variable has a significant influence on purchase intention. H2: subjective norms positively affect purchase intention.

In green consumption, PBC has been investigated as a determinant of behavioral intention (M.-F. Chen & Tung, (2014); Wu & Chen (2014). In the pro-environmental literature, PBC has defined as the degree of perceived ease or difficulty in performing certain types of behavior (Bamberg, 2003). Previous studies have shown that PBC significantly influences consumer purchase intentions for

energy-efficient products at the household level (Ali et al., 2019; Tan et al., 2017; Bhutto et al., 2021; Hua & Wang, 2019; Reyes-Mercado, 2017; Waris & Ahmed, 2020). H3: perceived behavior control positively affects purchase intention.

Perceived usefulness is a core construct of the Technology Acceptance Model (TAM), which provides insight into the causal interaction between behavioral beliefs (i.e., perceived usefulness and perceived ease of use), attitudes, intentions, and behavior, and argues that two beliefs can explain human behavior (Davis, 1989). Here, the perceived usefulness describes the extent to which consumers believe using energy-efficient appliances can save electricity usage. Research from Hua & Wang (2019) states that the perceived usefulness variable significantly influences purchase intention. H4: perceived usefulness positively affects purchase intention.

In terms of eco-literacy, as stated by Bhutto et al. (2021), if consumers are well-informed about environmental issues, they will tend to make purchasing decisions based on rational criteria, not feelings. Generally, environmental literacy will lead to stronger purchase intention for eco-friendly products as it implies a better understanding of environmental symbols, concepts, benefits, and consequences. Subjective norms reflect the social pressure that individuals feel to engage in certain types of behavior and are determined by a set of beliefs related to cultural values (Minton et al., 2018). Individuals are closely related to society in modern society, influencing their pro-environmental behavior (Zhang et al., 2019). Environmentally friendly products, such as EEA (Energy efficient appliances), often require more time, money, and enthusiasm to purchase before their consumption can be considered an effective way to solve environmental problems (T. T. H. Nguyen et al., 2019; Ramayah et al., 2010; Zhang et al., 2019). Eco-literacy increases consumers' perceived behavioral control over the purchase intention of eco-friendly products.

H5: Eco-literacy positively affects purchase intention.

H6: Eco-literacy moderates the relationship between attitude and purchase intention

H7: Eco-literacy moderates the relationship between subjective norms and purchase intention

H8: Eco-literacy moderates the relationship between perceived behavior control and purchase intention

Based on the explanation from the relevant research, the research model is as follows in Figure 1:

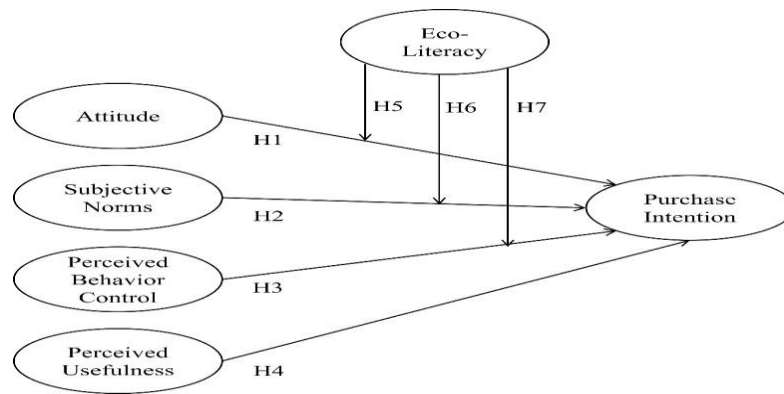


Figure 1. Research Framework

METHOD

The research design utilized in this investigation was a descriptive causality research design, and the methodological approach was quantitative. As a method for collecting data, this study uses a survey, which is accomplished through a tool in the form of a questionnaire that is disseminated online. As a result, the data collected is in the form of primary data. The questionnaire uses a 5 Likert scale measurement with a scale of 1-5 (1 = Strongly Disagree and 5 = Strongly Agree). The attitude measurement instrument adapted from (H. Ha & Janda, 2012) and (Bhutto et al., 2021) consisted of 3 statement items, Subjective Norms adapted from (T. N. Nguyen et al., 2018) and (Bhutto et al., 2021) consists of 3 statements, Perceived Behavior Control adapted from (Alam et al., 2014; Li et al., 2015) and (Bhutto et al., 2021) consists of 3 statements, Eco-literacy adapted from (Nature et al., 2014) and (Bhutto et al., 2021) consisting of 3 statement items, Perceived of Usefulness adapted from (Li et al., 2015) consisting of 5 statement items and Purchase Intention adapted from (Wang et al., 2019) which consists of 3 statements. So a total of 20 statement items. The sampling method uses non-probability sampling with a purposive sampling technique. The research was carried out from November to December 2022 with the criteria of a sample of respondents in the DKI Jakarta area with a population of women and men aged 23-60. The number of samples was 200 respondents.

The data analysis technique uses Structural Equation Model with two measurement models (Joseph F Hair et al., 2013), namely the Outer Model Analysis, which has five parameters, namely: Convergent Validity/loading factor (> 0.70) and Average Variance Extracted (AVE) (> 0.50), Discriminant Validity, Reliability Analysis (> 0.70), Cronbach's Alpha (> 0.60). Meanwhile, the Evaluation of Structural Model Measurement (Inner Model Analysis) uses four parameters, namely: Path Coefficients, Adjusted R Square Value (R^2), Stone Geisser Value (Q^2), and Partial Influence Size (f^2). Hypothesis testing involving structural relationships between constructs will only be reliable or valid if the measurement model explains how these constructs are measured (Joe F Hair et al., 2019). The significance test using the critical t value (t value) for a one-tailed test is 1.65, and for a significance level of the p-value of 5% (0.05), it means that it is said to be significant if the p-value is less than 0.05.

RESULT AND DISCUSSION

The questionnaire sampled for the study had 220 respondents and a 200 (90.9%) response rate. The respondents' demographic information in the study was gender, age, educational background, marital status, occupation, and position shown in Table 1.

Table 1. Respondents Demographic

Demographic	Frequency	Percentage (%)
Gender		
Male	96	48%
Female	104	52%
	200	100
Age		
23 - 30	82	41%
31 - 35	34	17%
36 - 40	35	17,50%
41 - 45	20	10%
46 - 50	9	4,50%
51 and above	20	10%
Educational Background		
Postgraduate	7	3,50%
First Degree	93	46,50%
Diploma	100	50%
Marital Status		
Menikah	123	61,50%
Belum menikah	77	38,50%
Occupation		
Housewife	7	3,50%
Private employees	166	83%
Government employees	3	1,50%
Self-employed	24	12%

In this study, each construct has an AVE value of more than 0.50, and the minimum acceptable loading factor size is more than 0.70. From the processing results of Smart PLS 4.0, shown in Table 2, there are 20 indicators; the result is that 20 indicators have a loading factor value > 0.7 and an AVE value > 0.5 . Construct reliability can be assessed from Cronbach's alpha and composite reliability in each construct. The recommended composite reliability and Cronbach's alpha are more than 0.6. The

reliability test results in Table 2 show that the construct has a composite reliability greater than 0.7, and Cronbach's alpha value is more than 0.6. In conclusion, all constructs meet the required reliability. The values of the loading factor, Cronbach's alpha, composite reliability, and AVE for each complete construct are shown in Table 2.

Table 2.

Loadings Factor, Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE)

Variable	Indicator	Factor loadings ➤ 0,7	Cronbach's Alpha >0,6	Composite Reliability >0,7	AVE >0,5
Attitude (ATT)	ATT1	0.885	0.865	0.917	0.787
	ATT2	0.893			
	ATT3	0.884			
Subjective Norms (SN)	SN1	0.819	0.803	0.883	0.717
	SN2	0.876			
	SN3	0.844			
Perceived Behavior Control (PBC)	PBC1	0.894	0.895	0.935	0.827
	PBC2	0.919			
	PBC3	0.915			
Perceived Usefulness (PU)	PU1	0.903	0.911	0.934	0.740
	PU2	0.816			
	PU3	0.896			
	PU4	0.796			
	PU5	0.884			
Purchase Intention (PI)	PI1	0.835	0.757	0.860	0.673
	PI2	0.882			
	PI3	0.736			
Eco-literacy (ECO)	ECO1	0.875	0.885	0.929	0.814
	ECO2	0.918			
	ECO3	0.912			

The path coefficient value indicates a significant level in hypothesis testing. The path coefficient t-value must be higher than the t-critical value of 1.65. Hypothesis testing is seen from the path coefficient bootstrapping analysis results by comparing the t-value with the critical t. The hypothesis is accepted if the t-value > t-critical (1.65). The analysis results on bootstrapping on the path coefficient are in Figure 2 below.

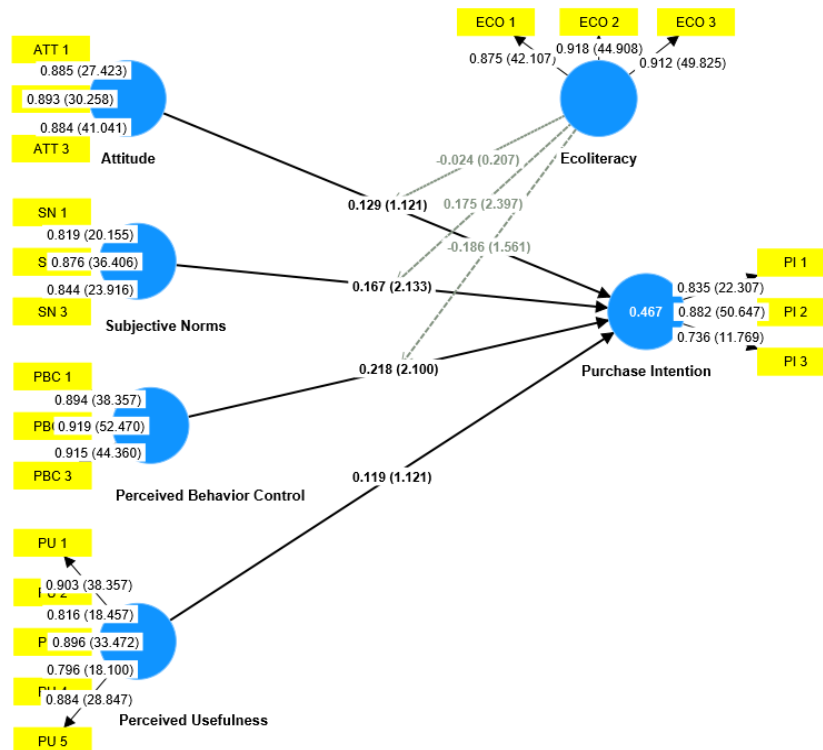


Figure 2. Inner Model Analysis

Figure 2 shows the t-values for all paths in the structural model tested greater than the critical t of 1.65. The results of the t-test analysis show that the attitude variable does not affect purchase intention, with a t-value of 1.121 which is less than 1.65. The subjective norms variable directly and significantly affects purchase intention, with a t-value of 2,133 greater than 1.65. The perceived behavior control variable positively and significantly affects purchase intention, with a t-value of 2,100 greater than 1.65. The perceived usefulness variable does not affect purchase intention, with a t-value of 1,121, less than 1.65.

The structural model's R-square (R^2) value for each endogenous latent can be determined if >0.67 is strong, 0.32-0.66 moderate, and 0.19-0.32 weak. It can be seen from Figure 2 that the R-square value of the purchase intention variable is 0.467, which indicates that the Attitude, Subjective Norms, Perceived Behavior Control, and Perceived Usefulness variables can moderately explain the Purchase Intention variable of 46.7%. The remaining 53.3% is explained by other variables that do not exist in this study.

Furthermore, the Q-square (Q^2) results show that the measurement model is suitable for producing observation and estimation parameters. If the Q^2 value is greater than 0 (zero), then the

model is considered to have a relevant predictive value Hair et al. (2017). In this study, the Q^2 calculation result for the Purchase Intention variable is 0.397, which means the variable has a moderate predictive correlation because the Q^2 result exceeds zero.

F-square (F^2) measures the partially significant effect of exogenous variables on endogenous variables. The estimated value of F^2 is 0.02; 0.15; 0.36 indicates that the practical value is weak, medium, and strong. Based on the data processing results, the F^2 value of the subjective norms variable for purchase intention is 0.028 (weak) with a t-value of 2.133, and the perceived behavior control variable for purchase intention is 0.030 (weak) with a t-value of 2.100.

This model fit is a value that indicates the overall suitability level in a model that can be calculated with the residual value in a model that is predicted by comparing it with the actual data. In Table 6, based on the analysis of the Standardized Root Mean Square (SRMR) value of 0.048 < 0.08, it can be stated that the model fits the data.

Hypothesis test

The hypothesis can be accepted or rejected by looking at the significant values of the t-values and p-values. At a significant level of 5% (95% confidence level), if the t-value is greater than the critical t-1.65, the exogenous variable with a one-sided significance test of 5% is declared significant to the endogenous variable. The significance of the variable can also be seen from the p-values, which are smaller according to a predetermined alpha level of 0.05. Based on the results of the analysis, it is stated that of the five existing hypotheses, 4 of them are proven to be accepted, and 1 hypothesis is rejected or is not significant, as can be seen in Figure 2 above and Table 3 below:

Table 3. Hypothesis Results

Hypotheses		Original sample	t- values >1.65	p- values < 0.05	Result
H1:	<i>Attitude → Purchase Intention</i>	0.129	1.121	0.131	Rejected
H2:	<i>Subjective Norms → Purchase Intention</i>	0.167	2.133	0.016	Accepted
H3:	<i>Perceived Behavior Control → Purchase Intention</i>	0.218	2.100	0.018	Accepted
H4:	<i>Perceived usefulness → Purchase Intention</i>	0.119	1.121	0.131	Rejected
H5:	<i>Eco-literacy x attitude → Purchase Intention</i>	-0.024	0.207	0.418	Rejected
H6:	<i>Eco-literacy x Subjective Norms → Purchase Intention</i>	0.175	2.397	0.008	Accepted

H7:	<i>Eco-literacy x Perceived Behavior Control → Purchase Intention</i>	-0.186	1.561	0.059	Rejected
-----	---	--------	-------	-------	----------

DISCUSSION

The results of the first hypothesis research prove that the attitude variable cannot yet impact purchase intention, meaning there is no influence between the attitude variable and purchase intention. Many people still need to realize the importance of attitudes toward purchasing energy-efficient and environmentally friendly household products. The results of this study are not in line with the results of research by H. Y. Ha & Janda (2012); T. N. Nguyen et al. (2017); and Z. Wang et al. (2019), which states that attitude has a strong influence in purchasing energy-efficient, environmentally friendly home product equipment.

The results of the second hypothesis research prove that there is a positive and significant influence between the subjective norms variable on purchase intention, meaning that there is an influence that can be seen from the increased interest in buying environmentally friendly energy-saving products because currently using environmentally friendly energy-saving products has become a social trend in society. Jakarta. This study's results align with the research conducted by Prete et al. (2017); M.-F. Chen & Tung (2014) state that subjective norms strongly influence purchasing environmentally friendly energy-saving products.

The results of the third hypothesis research prove that there is a positive and significant influence between the perceived behavior control variable on purchase intention, meaning that there is an influence that can be seen from the increased interest in buying environmentally friendly energy-saving products due to the belief that the people of Jakarta use energy-efficient and environmentally friendly products so that people do not have problems to keep buying eco-friendly energy-saving products even though the price of eco-friendly energy-saving products is slightly higher than conventional household products. The results of this study are in line with the results of research conducted by Ajzen & Fishbein (2005); Chao et al. (2012); Hameed et al. (2019), which states that perceived behavior control has a strong influence on purchasing environmentally friendly energy-saving products.

The results of the fourth hypothesis research prove that the perceived usefulness variable has not significantly impacted purchase intention, meaning there is no influence between the perceived usefulness variable and purchase intention. Many people still need to be made aware that energy-efficient household energy-saving products can work efficiently and save electricity costs. The results of this study are not in line with the results of Ovčjak et al. (2015); Reyes-Mercado, (2017), which state that perceived usefulness strongly influences purchasing energy-efficient, environmentally friendly home products and equipment.

The results of the sixth hypothesis research prove that the influence of subjective norms on purchase intention with the impact of eco-literacy moderation has significant positive results, meaning that the role of eco-literacy moderation strengthens the relationship between subjective norms on purchase intention because using environmentally friendly energy-saving products has become a social trend in society so that more people use environmentally friendly energy-saving products compared to conventional equipment. This study's results align with the results of Minton et al. (2018); dan Zhang et al. (2019).

The results of the seventh hypothesis research prove that the effect of perceived behavior control on purchase intention with eco-literacy moderation has insignificant results, meaning that the role of eco-literacy moderation weakens perceived behavior control on purchase intention because people's behavior control towards environmentally friendly energy-saving products is still not optimal. Therefore, it is necessary to believe in good environmental awareness. The results of this study are different from the results of T. T. H. Nguyen et al. (2019), Ramayah et al. (2010), and Zhang et al. (2019).

CONCLUSION

This study's overall results prove that the attitude variable does not affect purchase intention. Many people still need to realize the importance of attitudes toward purchasing energy-efficient and environmentally friendly household products. Furthermore, subjective norms have a positive effect on purchase intention. Using environmentally friendly energy-saving products has become a social trend in Jakarta. The following result of this study is that perceived behavior control positively affects purchase intention, meaning that the people of Jakarta currently understand the usefulness of using environmentally friendly energy-saving products. Hence, despite low prices, people have no problem buying environmentally friendly energy-saving products. More expensive than conventional household products. The following result is that perceived usefulness does not affect purchase intention. It means that many people still need to realize that energy-saving household products can work efficiently and save on electricity costs. Eco-literacy needs to be improved to impact the purchase intention of the people of Jakarta who believe in environmentally friendly energy-saving products in ensuring the labeling and certification of environmentally friendly energy-saving products.

There are several managerial implications in this research. First, environmental awareness and consumer confidence in environmentally conscious consumer behavior make a credible contribution to the field of green marketing, which provides substantial guidance to marketing practitioners and consumers regarding environmental sustainability. To attract more interest in buying energy-efficient electronics, marketing energy-efficient household appliances must develop effective strategies that emphasize product safety and environmental friendliness to meet potential value. Thus, users will

understand, influence, and be interested in buying sustainable, environmentally friendly energy-saving products that the people of Jakarta will arise by using environmentally friendly energy-saving products that can protect nature and the environment.

Second, to generate interest in buying environmentally friendly energy-saving products, the public needs to understand the usefulness the efficiency of these environmentally friendly energy-saving products. Third, the community needs to understand the impact of using this environmentally friendly energy-saving product to save on electricity costs so that it will have a good impact on the people of Jakarta who are already married and those who are not.

Fourth, the role of household consumers is significant in saving energy using energy-efficient appliances. Greater energy efficiency is a significant way to achieve the global goals of reducing energy use and tackling climate change. It can be achieved through better and faster energy dissemination.

Fifth, many well-known electronic companies, such as Samsung, Sharp, Cosmos, Sanken, Daikin, and Philips, offer affordable, quality, energy-efficient electronic products. Therefore, one of the most important things is that eco-literacy campaigns can be increased by companies which are efforts to maintain and build sustainable relationships, such as energy saving, public awareness, and consumers. Thus, marketing environmentally friendly products and services is a continuous process in forming Attitudes, Subjective Norms, Perceived Behavior Control, and Perceived Usefulness of Purchase Intention Electronic Energy-Efficient Home Appliances.

The limitations of the research are, firstly, this study explains the intention to buy products using only instruments based on the Theory of Planned Behavior in the context of energy-efficient household electronic products. Second, there are limitations in this study using populations and samples of the people of the Jakarta area, so this limits the generalization of the results to a certain extent. Third, this research is a cross-sectional study in which only data is taken at once. However, if a longitudinal study can show changes from one period to the next on the same subject, the results may differ. Fourth, adding new variables to support the research hypothesis that measures purchase intention is necessary.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Fishbein, M. (2005). *The influence of attitudes on behavior*.
- Alam, S. S., Hashim, N. H. N., Rashid, M., Omar, N. A., Ahsan, N., & Ismail, M. D. (2014). Small-scale households renewable energy usage intention: Theoretical development and empirical settings. *Renewable Energy*, 68, 255–263.
- Ali, S., Ullah, H., Akbar, M., Akhtar, W., & Zahid, H. (2019). Determinants of consumer intentions to purchase energy-saving household products in Pakistan. *Sustainability*, 11(5), 1462.
- Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, 23(1), 21–32.

- Bhutto, M. Y., Liu, X., Soomro, Y. A., Ertz, M., & Baeshen, Y. (2021). Adoption of energy-efficient home appliances: Extending the theory of planned behavior. *Sustainability (Switzerland)*, 13(1), 1–23. <https://doi.org/10.3390/su13010250>
- Chao, C.-W., Reid, M., & Mavondo, F. T. (2012). Consumer innovativeness influence on really new product adoption. *Australasian Marketing Journal (AMJ)*, 20(3), 211–217.
- Chen, M.-F., & Tung, P.-J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221–230.
- Cho, Y. C., & Sagynov, E. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment. *International Journal of Management & Information Systems (IJMIS)*, 19(1), 21–36.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340.
- Diaz-Sanchez, S., D'Souza, D., Biswas, D., & Hanning, I. (2015). Botanical alternatives to antibiotics for use in organic poultry production. *Poultry Science*, 94(6), 1419–1430.
- Gadenne, D., Sharma, B., Kerr, D., & Smith, T. (2011). The influence of consumers' environmental beliefs and attitudes on energy saving behaviors. *Energy Policy*, 39(12), 7684–7694.
- Ha, H., & Janda, S. (2012). Predicting consumer intentions to purchase energy-efficient products. *Journal of Consumer Marketing*.
- Ha, H. Y., & Janda, S. (2012). Predicting consumer intentions to purchase energy-efficient products. *Journal of Consumer Marketing*, 29(7), 461–469. <https://doi.org/10.1108/07363761211274974>
- Hair, Joe F, Page, M., & Brunsveld, N. (2019). *Essentials of business research methods*. Routledge.
- Hair, Joseph F, Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results, and higher acceptance. *Long Range Planning*, 46(1–2), 1–12.
- Hameed, I., Waris, I., & Amin ul Haq, M. (2019). Predicting eco-conscious consumer behavior using the theory of planned behavior in Pakistan. *Environmental Science and Pollution Research*, 26(15), 15535–15547.
- Hua, L., & Wang, S. (2019). Antecedents of consumers' intention to purchase energy-efficient appliances: An empirical study based on the technology acceptance model and theory of planned behavior. *Sustainability (Switzerland)*, 11(10). <https://doi.org/10.3390/su11102994>
- Husnul Khotimah. (2020). *8 Rekomendasi Produk Elektronik Rumah Tangga yang Murah dan Hemat Listrik*. My-Best. Id.
- Li, M., Lowrie, D. B., Huang, C.-Y., Lu, X.-C., Zhu, Y.-C., Wu, X.-H., Shayiti, M., Tan, Q.-Z., Yang, H.-L., & Chen, S.-Y. (2015). Evaluating patients' perception of service quality at hospitals in nine Chinese cities using the ServQual scale. *Asian Pacific Journal of Tropical Biomedicine*, 5(6), 497–504.
- Minton, E. A., Spielmann, N., Kahle, L. R., & Kim, C.-H. (2018). The subjective norms of sustainable consumption: A cross-cultural exploration. *Journal of Business Research*, 82, 400–408.
- Nguyen, T. N., Lobo, A., & Greenland, S. (2017). Energy efficient household appliances in emerging markets: consumers' Values and knowledge influence their attitudes and purchase behavior. *International Journal of Consumer Studies*, 41(2), 167–177.
- Nguyen, T. N., Lobo, A., & Nguyen, B. K. (2018). Young consumers' green purchase behavior in an emerging market. *Journal of Strategic Marketing*, 26(7), 583–600.
- Nguyen, T. T. H., Yang, Z., Nguyen, N., Johnson, L. W., & Cao, T. K. (2019). Greenwash and green purchase intention: The mediating role of green skepticism. *Sustainability*, 11(9), 2653.
- Ovčjak, B., Heričko, M., & Polančič, G. (2015). Factors impacting the acceptance of mobile data services—A systematic literature review. *Computers in Human Behavior*, 53, 24–47.
- Prete, M. I., Piper, L., Rizzo, C., Pino, G., Capestro, M., Mileti, A., Pichierri, M., Amatulli, C., Peluso, A. M., & Guido, G. (2017). Determinants of Southern Italian households' intention to adopt energy efficiency measures in residential buildings. *Journal of Cleaner Production*, 153(13), 83–91. <https://doi.org/10.1016/j.jclepro.2017.03.157>
- Ramayah, T., Lee, J. W. C., & Mohamad, O. (2010). Green product purchase intention: Some insights from a developing country. *Resources, Conservation, and Recycling*, 54(12), 1419–1427.

- Rettie, R., Burchell, K., & Riley, D. (2012). Normalizing green behaviors: A new approach to sustainability marketing. *Journal of Marketing Management*, 28(3–4), 420–444.
- Reyes-Mercado, P. (2017). Adoption of renewable energy technologies in Mexico: The role of cognitive factors and innovation attributes. *International Journal of Energy Sector Management*.
- Rosalina, M., & Wati, L. N. (2020). Pengaruh Gaya Kepemimpinan Terhadap Disiplin Kerja Dan Dampaknya Terhadap Kinerja Karyawan. *Jurnal Ekobis: Ekonomi Bisnis & Manajemen*, 10(1), 18–32. <https://doi.org/10.37932/j.e.v10i1.26>
- Sorrell, S. (2015). Reducing energy demand: A review of issues, challenges, and approaches. *Renewable and Sustainable Energy Reviews*, 47, 74–82.
- Tan, C.-S., Ooi, H.-Y., & Goh, Y.-N. (2017). A moral extension of the theory of planned behavior to predict consumers' purchase intention for energy-efficient household appliances in Malaysia. *Energy Policy*, 107, 459–471.
- Wang, Z., Sun, Q., Wang, B., & Zhang, B. (2019). Purchasing intentions of Chinese consumers on energy-efficient appliances: Is the energy efficiency label effective? *Journal of Cleaner Production*, 238, 117896.
- Waris, I., & Ahmed, W. (2020). Empirical evaluation of the antecedents of energy-efficient home appliances: Application of the extended theory of planned behavior. *Management of Environmental Quality: An International Journal*.
- Wu, S.-I., & Chen, J.-Y. (2014). A model of green consumption behavior constructed by the theory of planned behavior. *International Journal of Marketing Studies*, 6(5), 119.
- Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, 134, 114–122.
- Zhang, L., Fan, Y., Zhang, W., & Zhang, S. (2019). Extending the theory of planned behavior to explain the effects of cognitive factors across different kinds of green products. *Sustainability*, 11(15), 4222.
- Zhou, K., & Yang, S. (2016). Understanding household energy consumption behavior: The contribution of energy big data analytics. *Renewable and Sustainable Energy Reviews*, 56, 810–819.