Factors Affecting Consumer Purchase Intention toward Green Electrical Product

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Abstract: The purpose of this study is to find out the factors that affect consumer purchase intention toward green electrical products in Universiti Kuala Lumpur MITEC campus. The consumer trend to purchase green products in Malaysia is increasing. There is awareness among consumers regarding the importance of protecting the environment. But, there is lack of information about current consumer purchase intention toward green electrical products. This research studies the relationship between government's role, environmental concern and environmental knowledge with consumer purchase intention toward green electrical products. A questionnaire-based survey was conducted for data collection purposes and statistical analysis was done to determine the results. The results show a positive relationship between environmental knowledge and environmental concern toward consumer purchase Intention toward green electrical products.

Keywords: Green Product; Green Electrical Product; Consumers Purchase Intention;

I. INTRODUCTION

Recently, there is a rising concern from consumer in preserving and protecting the environment. The awareness from consumer lead to sustainable product development produces by the manufacturer. There is also consumer that really attach to protecting the environment and kept in promoting the anti-consumption of product or services that brought harm to the environment. This action has taken positive attention by producer, government, and unaware consumer [1].

The impact of the environment on human health has to alarm the academics, government, and organization [2]. In promoting green products, manufacturers, producers, and government need to keep tracing the best solution in attracting consumer in buying the green product. The most important factor that attracts consumer in purchase is price of the product [3].Green consumerism toward green products in Malaysia is still vague.

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Malaysian researchers have claimed that this trend is growing tremendously and Malaysian consumers still failed to see the trend of green buying behavior [4]. On top of that, Maichum, Paritchatnon, and Peng stated that there is still insufficient information on buying intentions of environmentally friendly products among consumers in developing countries [5]. Previous research regarding the study of factor that affecting consumer intention towards green product focus on delivering the purchase intention in overall Green product [6]. The problem for this study is the trend of consumer purchase intention toward green electrical products is unobserved.

The term "green" in Green Product can be explained as a product or services and practices that enhance the development of the economy but at the same time also provide preservation for future generations [7]. Hence, Green Electrical Product is referred to as an electrical product that gives positive impact on the environment. The application of green electrical products is very important in improving the environment as 25 percent of total Carbon emission is comes from electricity and heat generation [8].

There is a gap in the literature pertaining to purchase intention of green electrical products specifically. This study is conducted to filling the gap by finding the factor affecting consumer purchase intention toward green electrical products. The information is useful for producer in producing the right green electrical product that has product characteristics intended by the consumer. Thus, there will be more purchase decisions toward green products. So, the objective of this study is to determine the selected determinants that affect consumer purchase intention toward green electrical products.

II. LITERATURE REVIEW

A. Green Electrical Product

Durif has explained green products can be defined into several definitions based on different perspective [9]. From academic perspective, the products that function and ideas related to the recycling, production, sale, use and waste processes, pollution reduction and energy savings available for recycling [10]. On top of that, Baker and Ozaki defining environmentally sustainable products are complex. In a strict sense, there is no such thing as a truly sustainable or green product, as all products that have been bought, own, use and discard in people's everyday lives will have negative environmental impacts at some stage in their life cycles [11].

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Other than that, if the electrical machine operates in heat stabilized mode, it can be analyzed through both the energies involved and the active powers.

In order for the electric product to operate, it will produce heat when the energy conversion happens. Electricity and heat, which account for 25 percent of total emissions, are the biggest contribution from the total carbon emissions [12]. Green electric products can thus improve the environment by reducing carbon emissions due to less energy consumption.

B. Government's Role (GR)

The government's Role (GR) refers to Government imitative in promoting green products to the citizen, manufacturing and producer. Malaysia has supported the development of green technology in Malaysia. Prime Minister Datuk Seri NajibTunRazak published the 11th Malaysia Plan on 21 May 2015. It is a national plan for the next five years of developments in the country, and it will be the last leg of the race to the year 2020 when Malaysia plans to become a developed nation [13]. According to Malaysia 11th Plan (2015), there is six strategies for execution of this plan. The fourth strategy is referred to Green Growth [14]. It shows that Malaysia is taking seriously the environment matters. Adetola et al. (2017) claimed that there is a positive connection between government and green procurement intentions [15]. No emphasis can be placed on the role of the government in environmental preservation. Determining and exploring the green purchase attitude among Pakistani reveal the significant impact of the role of government on green buying intentions [16]. Respondents believe that governments do not impose strict environmental protection and pollution control laws and it states that the study showed that perceived governments have no influence on the environmental position of the respondents [17].
Hypothesis 1: Government Role affects consumer purchase intention toward green electrical product.

C. Environmental Knowledge (EK)

Knowledge is the understanding regarding something by the self-ability to interpret data, information, facts, reading material, learning, experience and more. The Mighty God, God created man and gave him instruments for learning, namely listening, sight and intelligence and lead to knowledge. William R. King has divided knowledge as tacit and explicit knowledge that leads to justification for personal belief [18]. In purchasing, knowledge is very important to determine the consumer's choice and the impact in making a decision. Knowledge is used in product evaluation and purchase decisions by consumer [19]. Previous research regarding green products has reported the empirical finding show that environmental knowledge (EC) was the strongest predictor of environmental attitude for green products [5]. Rahman also has stated when the consumer is knowledgeable it lead to self-prepared to buy green products [20].
Hypothesis 2: Environmental knowledge affects consumer purchase intention toward green electrical product.

D. Environmental Concern (EC)

Environmental Concern (EC) has been dealt with as an assessment or attitude against facts, oneself conduct or the conduct of others with environmental consequences [21]. According to this research, people evaluate a fact and the positivity of attitude to the fact. The fact here is in the dimension of environment. Environmental concern has a significant relationship with purchase intention but it appears that consumer requires specific information to support environmental concern that influences consumer purchase intention [22]. Adetola et al. (2017) stated that there is positive relationship between environmental concerns on consumers' purchase intentions of environmentally-friendly electrical products in Nigeria [15]. Hypothesis 3: Environmental Concern affects consumer purchase intention toward the green electrical product.

D. Consumer Intention toward Green Electrical Product

Consumers are motivated to encourage or change their behavior towards sustainable product purchases. Environmentally friendly products are alternatively called' environmentally friendly products' or' green products' [5]. But, production companies and marketers have not been able to sell green products, while there has been an extraordinary rate of growth among these consumers because of the decreasing environmental preference of consumers for green products. The significance of environmental awareness and knowledge related to the attitude towards the environment and the intention of buying young consumers and leading to sustainable development. Intention refers to the driving factors that influence a specific behavior because a person is more inclined to conduct when the intention is strong [23].The researcher found that the Theory of Planned Behavior by Azjen (1991) is the best theory that suite in finding the factor that affecting consumer purchase behavior toward green electrical product [24]. From this theory, Intention is derived by three precursor which are Attitude, Subjective Norms and Perceived Behavioral Control.
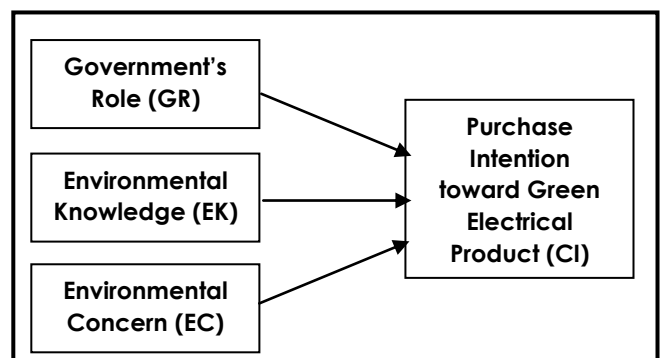

Fig. 1 Conceptual framework

Based on previous research, the researcher can address three independent variables that influence consumer purchase intention toward green electrical products.

III. METHODOLOGY

The study is conducted by a positivist research philosophy where hypothesis was developed by referring previous research information.

This research was conducted by applying deductive approach.

The survey has been conducted in Universiti Kuala Lumpur Malaysian Institute of Industrial Technology (UniKL MITEC) in PasirGudang to determine the factors affecting consumer purchase intention toward green electrical products. The questionnaire has been developed by adapting previous study and distributed to 291 total respondents.

The respondent for this research is the student in UniKL MITEC. The population on UniKL MITEC is consist lectures, staff, and student. Researchers choose students as they contribute to the biggest population in UniKL MITEC. There are 1172 total students on this campus. The sample size is determined by Krejcie& Morgan table.

The questionnaire for this study was adapted from the previous study. There is three sections of the questionnaire, first refer to the demographics of the sample like Gender, Age, Ethnicity, Course and Semester. Second refer to the independents variable and thirdly is refer to the dependent variable of the research.

Table. 1 Questionnaire Items

Item		Source
Government Role		
GR	Environmental protection is the responsibility of the Malaysian government, not me	
GR	School should require all students to take a course dealing with environmental and conservation problem	[25]
GR	The government should subsidize research on technology for recycling waste products	
GR	The government should enforce environmental rules and regulations.	
Environmental Knowledge		
EK1	I am very knowledgeable about environmental issues.	
EK2	I understand the environmental phrases and symbols on product packages.	
EK3	I know that I buy a green product that is environmentally safe	
EK4	I have knowledge of Important Environmental Concepts like sustainable, greenhouse gases, ecology	[5][26]
EK5	I have knowledge of Current Solutions to Environmental Issues like Alternative energy, Catalytic converters, Biodiversity legislation	
Environmental Concern		
EC1	I have to save the environment for the future generation	
EC2	I want to participate to help the environment	
EC3	I am concerned about Air pollution	[5][27]
EC4	I will help the environment even if it cost me more money or takes more time	
EC5	I am consciousness that purchasing green products will contribute to a	

sustainable future.

Intention to purchase green electrical product

CI1	I choose to purchase products that are environmentally-friendly.	
CI2	I buy green products even if they are more expensive than normal products.	
CI3	I intend to purchase green products next time because of its positive environmental contribution	[5][28]
CI4	I have the intention of switching to Green Electrical product for saving energy	
CI5	I choose to purchase products that are environmentally-friendly.	

Table 1 shows the list of questionnaire items for each variable involved in the study. There are four items for Government' Role and five items for each Environmental Knowledge, Environmental Concern, and Purchase Intention.

IV. RESULTS AND DISCUSSION

A. Descriptive Analysis

A total of 291 answered questionnaires were analyzed. As shown from Table 2, the majority of UniKL MITEC students were male which consists of 55.7% of total respondents between aged 18-25. Malay ethnic was the highest percentage (98.97%) among the respondent. Semester 3 students were the lowest percentage (7.2%) while 47% of the respondents were from BIL.

Table. 2 Demographic Analysis

Item	Classification	Frequency	Percentage
Gender	Male	162	55.7
	Female	129	44.3
Ethnicity	Malay	288	98.97
	Chinese	1	0.34
	Indian	2	0.69
	Other	0	0
Age	18-25	283	97.3
	26-35	8	2.7
Semester	1	24	8.2
	2	51	17.5
	3	21	7.2
	4	33	11.3
	5	42	14.4
	6	54	18.6
	7	60	20.6
	8	6	2.1
Course	DIL	30	10
	DQE	45	15.0
	BIL	141	47.0
	BQE	51	17.0
	BFAME	16	5.3
	BICE	8	2.7

Table 2 shows the demographic analysis for the study of factors affecting consumer purchase intention towards the green electrical product in UniKL MITEC.

B. Reliability and Validity

Data from this study were analyzed by using Confirmatory Factor Analysis. Reliability and Validity test was performed by using SPSS to test the constructed items.

Table. 3 Cronbach's Alpha

Variable	Mean	Standard Deviation	Cronbach's Alpha
Government's Role	13.2680	2.73489	0.703
Environmental Knowledge	17.3711	3.88717	0.889
Environmental Concern	18.2474	3.93927	0.890
Consumer Purchase Intention	17.4433	4.66750	0.939

Table 3 shows the result of the reliability and validity test. From the table, the figure shows Cronbach's Alpha values ranged from 0.703 to 0.939. Those figures demonstrate high level of reliability. The high-reliability figure for Cronbach's Alpha should more than 0.7[29]. From table 3, the highest Cronbach's Alpha reading is Consumer Purchase Intention which is 0.939 while the lowest is Government's Role, 0.703.

Table 3 also provides the mead and standard deviation score for each variable in the study. In the questionnaires, the respondents have to answer the 5 Likert Scales questions whereby the scales ranging from strongly disagree (1) to strongly agree (5). Overall mean scores for mean were ranged from 13.2680 to 17.4433 while the standard deviation was ranged from 2.73489 to 4.66750.

C. Correlation Analysis

Correlation analysis has been conducted to find out the relationship between Consumer Purchase Intention with Government's Role, Environmental Knowledge and Environmental Concern. Table 4 shows the result for Correlation.

Table. 4 Correlation Analysis

Variables		CI	EC	EK	GR
CI	Pearson Correlation	1	.952**	.738**	.453**
	Sig (2-tailed)		.000	.000	.000
EC	Pearson Correlation	952**	1	.748**	.522**
	Sig (2-tailed)	0.00		.000	.000
EK	Pearson Correlation	.738**	.748**	1	.170**
	Sig (2-tailed)	.000	.000		.000
GR	Pearson Correlation	.453**	.522**	.170**	1
	Sig (2-tailed)	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Pearson's value that is close to 1 indicating a strong relationship between the two variables meaning a variation in one variable is strongly correlated with the variation in other variables. Since there is no negative sign with the Pearson's value hence it specifies that rise in value of one variable results in the rise in value of the second variable, this is called positive correlation. Thus it is concluded that an increase in Environmental Concern, Environmental Knowledge and Government's Role results in increase in the Consumer Purchase Intention toward Green Electrical Product. ASig. (2-Tailed) value of 0.05 or less concludes that a significant statistical relationship among two variables exists. An increase or reduction in value of one variable does result in a significant increase or reduction in the value of second variable.

D. Regression Analysis

The regression analysis has been conducted in determining dependent and independent variables relationship. Table 5 refers to the model summary result.

Table. 5 Model Summary

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.953a	.909	.908	1.41794

Predictors: (Constant) Environmental Concern, Environmental Knowledge, Government's Role

Regression analysis summary from table 5 shows that the multiple correlation coefficient (R), using Environmental Concern, Environmental Knowledge and Government's Role predictors simultaneously, is .953 and Adjusted R Square is .908, meaning that 90% of the variance in Green Purchase Intention can be predicted from the combination of Environmental Concern, Environmental Knowledge and Government's R

Table. 6 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5740.785	3	1913.595	951.775	.000b
	Residual	577.029	287	2.011		
	Total	6317.814	290			

Dependent Variable: Consumer Purchase Intention

ANOVA in table 6 lets us know if our model is a significant model which means whether the independent variables are good predictors of the dependent variable.

This is shown by significance value (p-value) is less than alpha (.05) which in this case is .000(<.05). Model significance is explained as F(3,287)=951.775, p= .000. It shows that model can accurately explain variation in the dependent variable.

Table. 7 Coefficients

Modal		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	-2.720	.518		-5.249	.000
	GR	.086	.039	-.050	-2.214	.028
	EK	.041	.035	.034	1.166	.245
	EC	1.128	.040	.092	28.246	.000

a. Dependent Variable: Consumer Purchase Intention

Table 7 shows the coefficient result for the variables. There were three hypotheses proposed and below are the result;

Hypothesis 1(Government Role affects consumer purchase intention toward green electrical products). One unit increase in Government Role results in .086 increase in Consumer Purchase Intention toward green electrical product. For every 1 movement in standard deviation in Government Role there is -.050 movement in standard deviation in Consumer Purchase Intention toward green electrical product. Thus, H1 is accepted, signifying that Government Role has a positiveand significant impact on Consumer Purchase intentions toward green electrical products.

Hypothesis 2(Environmental knowledge affects consumer purchase intention toward green electrical products).One unit increase in Environmental Knowledge results in .041 increase in Consumer Purchase Intention toward green electrical products. For every 1 movement in standard deviation in Environmental Knowledge there is .034 movement in standard deviation in Consumer Purchase Intention toward green electrical product. Thus H2 is accepted, signifying that Environmental Knowledge does influence Consumer Purchase Intentions toward green electrical products.

Hypothesis 3(Environmental Concern affects consumer purchase intention toward green electrical products). One unit increase in Environmental Concern results in 1.128 increase in Consumer Purchase Intention toward green electrical products. For every 1 movement in standard deviation in Environmental Concern there is .952 movement in standard deviation in Consumer Purchase Intention toward green electrical product. Thus H 3 is accepted, signifying that Environmental Concern does influence Consumer Purchase Intentions toward green electrical products.

V. CONCLUSION AND RECOMMENDATION

This study was focused on determining the selected determinants that affect consumer purchase intention toward the green electrical product. This study was a case study conducted in UniKL MITEC PasirGudang. The determinants thatapplied for this study were Government's Role, Environmental Knowledge, and Environmental Concern. The result shows the positive relationship between Government's Role, Environmental Knowledge and Environmental Concern with consumer Purchase Intention toward green electrical products. From the result, we can conclude that, strongest factors affecting consumer purchase intention toward green electrical product is Environmental Concern, while weakest is Government's Role.

For recommendation, current study has faced several limitations that can be improved for future direction. First, this study has limited scope since it is focused on students in UniKL MITEC only. It is recommended to conduct study to bigger population in Johor by using the same variables and not limited to a specific group. Secondly, future direction also is done by examining the relationship between independent variables with intention by using the Theory of planned behavior precursor of intention which is attitude, subjective norms and perceived behavioral control. This study can help the government, manufacturer, and marketer to improve their strategies in promoting green growth in Malaysia.

REFERENCES

1. Cherrier, H., Black, I. R., & Lee, M. (2011). Intentional non-consumption for sustainability. European Journal of Marketing.
2. R. Yadav and G. S. Pathak, "Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior," Journal of Cleaner Production, vol. 135, pp. 732-739, 2016
3. Dosi, G., G. F., Napoletano, M., &Roventini, A. (2013). Income distribution, credit and fiscal policies in an agent-based Keynesian model. Journal of Economic Dynamics and Control
4. Yen-Nee, G., & Wahid, N. A. (2015). A Review on Green Purchase Behaviour Trend of Malaysian Consumers. Canadian Center of Science and Education, 103
5. Maichum, K., Parichatnon, S., &Peng, K.-C. (2017). Environment awareness. Factors Affecting on Purchase Intention towards Green Products: A Case Study of Young Consumers in Thailand.
6. Gayathree, P. (2016). Consumerism. Factors Affecting the Purchasing Intention of Green Product
7. Speer, M. (2011). The definition of green product. What is a Green Product
8. EPA. (2017). Global Greenhouse Gas Emissions Data. United States Environmental Protection Agency
9. Durif, F., Boivin, C., &Julien, a. C. (2010). Green product definition and perspective. In Search of a Green Product Definition.
10. Liu, M., & Wu, S. (2009). Green Supplier Assessment: A Case Study of the Fire Extinguisher Industry. Journal of American Academy of Business, 2009. – Vol. 14. – v 2, 104-111
11. Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: marketing influence on consumer purchase decision. Journal of Consumer Marketing ol. 25 No. 5, 281-293.
12. Gayathree, P. (2016). Consumerism. Factors Affecting the Purchasing Intention of Green Products.
13. MTC. (2015). 11th Malaysia Plan - Malaysia's March. Malaysian Timber Council
14. National Institute of Public Administration (INTAN). (2016, january 2). Eleventh Malaysia Plan. Retrieved from National Institute of Public Administration (INTAN) official website: http://www.intanbk.intan.my/iportal/en/rmk1
15. Usmani, S., Kumari, K., Husain, J., & Jamal, S. (2015). CONSUMER'S PERCEPTION AND PURCHASE INTENTIONS TOWARDS GREEN PRODUCTS: EXPLORING THE ATTITUDE AMONG PAKISTANI CONSUMERS. Proceedings of SOCIOINT15-2nd International Conference on Education, Social Sciences and Humanities, 91

16. Qader, I. K., &Zainuddin, Y. (2010). Intention to Purchase Green Electronic Products:The Consequences of Perceived Government Legislation, Media Exposure and Safety & Health Concern and the Role of Attitude as Mediator. International Journal of Innovation, Management and Technology, Vol. 1, No. 4, October 2010.
17. King, W. R. (2009). Knowledge Theories. In Knowledge Management and Organizational Learning (pp. 3-13). Crotia: Springer Science & Business Media.
18. Syahbandi. (2012). Implementasi Green Marketing MelaluiPendekatan Marketing MIX, Demografi Dan PengetahuanTerhadapPilihanKonsumen (Studi The Body Shop Pontianak). JurnalEkonomi, BisnisdanKewirausahaan, 3 (1), 68-86
19. Rahman, M. M. (2013). Green Products: A Study on Young & Native Swedish Consumers' Purchase Intentions of Green Products. Umeå School of Business & Economics.
20. Fransson, N., &Gorling, T. (1999). ENVIRONMENTAL CONCERN: CONCEPTUAL DEFINITIONS, MEASUREMENT METHODS, AND RESEARCH FINDINGS. Journal of Environmental Psychology (1999) 19, 369^382, 370
21. Newton, J. D., Tsarenkob, Y., b, C. F., & Sands, S. (2015). Environmental concern and environmental purchase intentions: The mediating role of learning strategy. Journal of Business Research.
22. Meidani, M. (2014). Facilitating condition. THE FACTORS AFFECTING CUSTOMER PURCHASE INTENTION IN ELECTRONIC COMMERCE.
23. I. Ajzen, From intentions to actions: A Theory of Planned Behavior, Springer, 1985.
24. Mifsud, M. (2012). ENVIRONMENTAL EDUCATION DEVELOPMENT IN MALTA: A CONTEXTUAL STUDY OF THE EVENTS THAT HAVE SHAPED THE DEVELOPMENT OF ENVIRONMENTAL EDUCATION IN MALTA. ournal of Teacher Education for Sustainability,vol. 14, no. 1, pp. 52–66, 2012, 54-62
25. Felix, A.-T., Asuamah, S. Y., &Darkwa, B. (2016). ENVIRONMENTAL CONCERN: A SURVEY OF STUDENTS ATTITUDE IN SUNYANI POLYTECHNIC. International journal of Innovative Research in Management , 1-10.
26. Yong, N. L., Ariffin, &Kamalul, S. (2017). A Study of Factors influencing Consumer's Purchase intention toward green vehicles: evidence from Malaysia. Global Business and Management Research: An International Journal, 281
27. J. C. Nunnally and I. Bernstein, "Elements of statistical description and estimation," Psychometric Theory 3 Edition (Edited by: Nunnally JC, Bernstein IH), 1994.