The Spending Pattern on Green Products Among Lower Income Group Households in Malaysia

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This study is conducted to examine the relationship between green lifestyle among lower income group households and their spending pattern on green products. Compared to previous studies, the novelty of this study is important due to the increase in households' cost of living that is related to a spending pattern on non-green products. The rising cost of living among these households' groups may have its influence on green products in three aspects, namely consumer perception, practice level and willingness level. Therefore, this study focuses on monthly expenditure pattern of the lowest income group (B40) on green products. This study uses the quantitative approach through questionnaires distribution and employs a method of multiple linear regression models, in estimating the augmented consumer behaviour model. In general, the findings show a positive relationship between income and expenditure on green products. In other words, increase in income will lead consumers to buy more green products from the market. Moreover, the result demonstrates that the total monthly expenditure on green products is significantly affected by consumer perceptions and level of practice. On the other hand, level of willingness does not seem to be important with regard to green products' spending pattern. This study indirectly implies that users of green products will save on the cost of monthly spending in the long run. The study further suggests that long term use of green products among low-income groups (B40) will curtail overall households' expenses.

Keywords: *Spending Pattern, Green Products, Low Income Group, Multiple Linear Regression Estimation Model, Malaysia.*

Introduction

The increasing cost of living due to rising domestic prices of goods and services has a significant impact on households' spending. Nonetheless, due to the debatable issue of inconsistency between the escalation of cost of living and households' income, many researchers still find this issue interesting. The inconsistency, in turn, will reduce household disposable income in the long run. Macroeconomic issues such as inflation has led to economic pressures for the lowest income people, as their income is barely enough to meet the basic necessities for their families, thus, these households are barely capable of saving money. Hence, the government implemented a lot of programs in helping the bottom 40% income group. For instance, in 2017 budget, the Malaysian government allocated 100 million ringgit for the Agropreneur program implementation to produce 3,000 young farm entrepreneurs involved in the production of high-value farming, especially in the B40 group (ie households with the lowest 40% income whose monthly household income is less than RM3, 860), in order to generate income opportunities for this specific group. Yet, such action still has not guaranteed the survival of this group in facing the higher cost of living. Despite various initiatives undertaken by the government in assisting the lower income group, it has failed to help the lower income households bring up living standards due to the high cost of living and inflation in Malaysia. This statement was supported by statistical data from Bank Negara Malaysia (BNM) whereby the lowest income group (B40) spent most of their income on food due to rising food inflation in 2014 (3.3%) and 2015 (3.6 %). Therefore, in order to curtail B40 group households' expenses, there are some solutions the government can do to overcome the problem. One step to be done is to encourage B40 group to use green products.

The next section is the discussion of the previous finding on the related field. Then the discussion on the estimation model and econometric approach will be in the methodology section. The discussion of the estimating findings will be described in the findings section. The conclusion and discussion of the findings is in final section.

Literature Review

Related to this issue, Koh Lenny (2013), promoted the green deal to low income communities, in the district of Yorkshire and Humber, England, which would not only help reducing pollution caused by carbon emissions but at the same time, lowered the cost of living by

slashing energy bills as well as increasing employment opportunities and productivity in local and national supply chains. Furthermore, Abdullah Al Mamun, Syed Ali Fazal, Ghazali Bin Ahmad, Mohd Rafi Bin Yaacob & Mohd. Rosli Mohamad (2018) revealed the positively significant effects of eco-literacy and environmental concern upon attitudes towards environmental-friendly products; normative beliefs and perceived behavioural control on the willingness to pay for environmental-friendly products; as well as the perceived behavioural control on payment behaviour for environmental-friendly products, among low-income households in coastal Peninsular Malaysia.

Moreover, Jamilah and Hasrina (2011), from the perception side, stated that, being green, consumers required a certain amount of cost in the short run, thus this was rather burdensome for low income households. Yet, in the long run, it would be much more economical than the usage of non-green products. In other words, user perception on using green products gave a positive impact on green product expenditure in the long term. Furthermore, according to Golnaz Rezai, Phuah Kit Teng, Zainal Abidin Mohamed and Mad Nasir Shahsudin (2013), the green concept could be widely accepted in Malaysia if consumers knew and realised that they could also preserve the environment by being green consumers through practice.

In addition, lower income households were also able to save their expenses in the long run, through their own farming and cultivation activities. Furthermore, Fulong-Daniel Feng (2010) claimed that in general, many factors could affect the spending pattern among consume, including demographical, social, and economic (Norimah, Dayang Affizzah, Noor Al Huda, Emilda and Asmawi, 2015) factors, as well as level of perception (Mei et al, 2012; Chen, 2016; Kai, 2016; Jamilah et al.,2011), willingness (Abdullah et al., 2018; Lanzini, 2016; Yadav, 2016) and practices (Golnaz, 2013; Kim, 2011; Cheung, 2015). Nonetheless, there have been only a few studies focusing on Malaysians' issues regarding spending on green products. Most of recent studies have focused on developed countries rather than developing countries like Malaysia. Therefore, by adapting the consumer behaviour model, this paper tries to fill the gap by examining the role of consumer perception, level of practice and level of willingness among lower income group households, pertaining to their spending pattern on green products in Malaysia. Specifically, this study contributes to previous literature in two ways. First, the findings from this study will further enhance the reference materials for developing countries.

Second, most of past studies have put much emphasis on the views of the society in terms of their concerns and views on being green product users, but lacking in research related to the level of acceptance to adopt life as green consumers. Hence, this study would like to see the effect of level of readiness among households in becoming green consumers and green product spending in Malaysia. In the next sections, there will be in depth discussions regarding model specification and will be followed by the findings and conclusion.

Methodology

Based on consumer behaviour theory, the main factor affecting the consumer spending pattern is their income level (Norimah et al., 2015; and Syazwani, Norimah Emilda and Maryam, 2017). In addition, according to Norasibah, Hamidah, Norimah, Norsamsinar and Zainizam, 2015), the spending pattern of each user varies and is unique across many factors. Therefore, inspired by Golnaz Rezai et al. (2013), by utilising the ordinary least square method, the multiple linear regression model is used to investigate the highest magnitude value in affecting the spending pattern on green products. In order to achieve this objective, around 150 samples of respondents in Tanjong Malim, Perak are taken through questionnaires survey. The samples are distributed among low income households by focusing on practice, willingness and perception on using the green products.

Thus, the model specification is in equation (1) as below:

$$GS_i = \beta_0 + \beta_1 HI_i + \beta_2 CP_i + \beta_3 PT_i + \beta_4 WR_i + \varepsilon_i \tag{1}$$

Where, GS_i is Total Expenditure of green products, HI_i is the total household monthly income. CP_i is consumer perception, PT_i is practice level, and AWR is consumer willingness. β_0 is constant while β_1, β_2, β_3 and β_4 are observer magnitude value for each independent variable. Finally, ε_i is the error term.

Findings

In this section, there will be a deep explanation about the estimated results. In this section, the relationship between the independent variable and the dependent variable is also explained in detail. The estimation model is as in equation (2).

$$GS_i = 5.914 + 0.245HI_i + 1.032CP_i + 0.436PT_i - 0.335WR_i \tag{2}$$

t-test   (2.416)***   (2.203)** (2.591)**   (-1.054)

SE   (0.102)   (0.468)   (0.168)   (0.109)

*** Significant at 99 percent

** Significant at 95 percent

Table 1: The Estimation Regression Model of Spending Pattern on Green Products Among Lower Income Group

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.914	1.687		3.506	.001
Income	.245	.102	.217	2.416	.007
Perception	1.032	.468	.183	2.203	.029
Practices	.436	.168	.272	2.591	.011
Willingness	-.335	.318	-.109	-1.054	.294

Table 2: Results for t-Test

Variables	Hypothesis	Statistical Test	Critical Value	Result	VIF	Rank of magnitude
Income	$\beta_1 = 0$ $\beta_1 \neq 0$	2.416	2.064	Reject H_0	4.567	1
Perception	$\beta_2 = 0$ $\beta_2 \neq 0$	2.203	2.064	Reject H_0	5.671	3
Practices	$\beta_3 = 0$ $\beta_3 \neq 0$	2.591	2.064	Reject H_0	4.532	2
Willingness	$\beta_4 = 0$ $\beta_4 \neq 0$	-1.054	2.064	Reject H_0	5.776	4

Equation (2) simplifies the multiple linear regression results from Table 1. According to estimation results, spending on green products is affected by household income at 99 percent significant level. Furthermore, the results suggest that, the consumer perception and practice level are significant at 95 percent, in affecting the spending on green products among the lower income group. In other words, consumer perception and consumer practices are important determinants with the spending pattern on green products. Surprisingly, the level of consumer willingness in spending on green products is not significant at 95 percent. In other words, even the lowest earners realise that being green consumers are good for them in the long run, but if they have the chance, they will not deem the usage of green products as a priority.

Table 2 simplifies the result from equation (2). This finding is supported by the insignificant negative relationship between willingness and spending on green products among the lowest income household in Malaysia. This result is in contradiction with Nuttavuthisit and Thøgersen (2017) and Rezai, Kit Teng, Mohamed & Nasir Shamsudin (2013). These studies stated that, monthly spending cost is saved by being a green consumer. Nevertheless, based on the result, lower income group households (B40) have chosen not to become green product users, should they have a chance to choose between using green products or otherwise. This outcome may be due to lack of awareness among B40 households regarding the importance of using green products in the purpose of cost saving, thus, it will lead towards the negative effect of

consumers' willingness to spend on green products. My point being, should the awareness of using green products be improved among B40 group, willingness is also expected to have a positive effect on green product usage. Ultimately, this study insinuates that consumers will save on monthly spending in the long run by being green product users. The study further suggests that long term use of green products among low-income group (B40) will curtail overall households' expenses.

Conclusion and Discussion

Overall, this study concludes that consumer perception and practice level are important determinants and have significant relationships with green products spending in Malaysia. The study suggests that long term usage of green products among low-income groups (B40) will curtail the cost of household expenses as a whole. According to Golnaz Rezai et al. (2013), it is argued that to be a green user plays an important role in three major aspects, namely economic, cultural and social. He also argued that sustainable development was not only important to the environment but also an important tool in improving the quality of life, aesthetic value and providing services to communities such as recreational parks, green shops and green community. The implications of this study are divided into three categories namely households, government and other agencies.

Household

Households play an important role in producing the next generation of green consumers. Therefore, households should have high levels of concern and environmental awareness. This is because by adopting the use of green products among households can reduce the cost of household expenses while also protecting and conserving the environment from contamination. Because parents are a role model for children, parents should play an important role in educating and implementing green consumption practices from an early age. In addition, households should be wise in spending as much as possible on their home and the environment by considering the current cost of living.

Society

Through this study, by becoming a green consumer, can help the development of a knowledgeable society that leads to the practice of using green products in cost savings. In

addition, people can live more sustainably if they become environmentally conscious, learn from nature, live simpler lives and become active communities in developing the environment. Furthermore, green consumers can improve the quality of life of the people.

Government and other agencies

This study is also important for governments and other agencies to bring the benefits of green consumers to the community, especially to the lower income groups (B40). The government should initiate initiatives for this group to encourage them to adopt the use of green products to reduce the cost of household spending. For example, running a green user campaign, running ads and posters on the benefits of being a green user. In addition, other agencies should also support the government's action by helping the public, especially the lower income groups (B40), to reduce household spending.

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REFERENCES

Abdullah Al Mamun , Syed Ali Fazal , Ghazali Bin Ahmad, Mohd Rafi Bin Yaacob & Mohd. Rosli Mohamad. (2018). Willingness to Pay for Environmentally Friendly Products among Low-Income Households Along Coastal Peninsular Malaysia. MDPI Publication. Pp: 1-19

Chen, Y. S., & Chang, C. H. (2013). The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity. *Journal of Business Ethics*, *116*(1), 107–119. https://doi.org/10.1007/s10551-012-1452-x

Chen, K.; Deng, T. (2016).Research On The Green Purchase Intentions From The Perspective Of Product Knowledge. Sustainability. 8, 943.

Cheung, R.; Lau, M.; Lam, A. (2015).Factors Affecting Consumer Attitude Towards Organic Food: An Empirical Study In Hong Kong. J. Glob. Sch. Mark. Sci. 25, 216–231.

Fulong-Dabiel Feng. (2010). "Green" Company or "green" Consumers: A Kantian Retrospective. Emerald Insign.

Golnaz Rezai, Phuah Kit Teng, Zainalabidin Mohamed and Mad Nasir Shahsudin. (2013). Consumer Willingness to Pay for Green Food in Malaysia. Journal of International Food and Agribusiness Marketing. Vol 25. No.1.

Jamilah, A. (2012). Amalan Mesra Alam : Kajian Pengetahuan Alam Sekitar di Sabah dan Sarawak *(Environmentally Friendly Practices: Environmental Knowledge Study in Sabah and Sarawak). .Malim- SEA Journal of General Studies*, *13*(July), 139–154.

Jamilah Ahmad & Hasrina Mustafa (2011). Pengetahuan, Sikap dan Amalan Masyarakat Malaysia terhadap Isu Alam Sekitar *(Knowledge, Attitude and Practice of Malaysian Society on Environmental Issues). Akademika*, *81*(3), 103–115.

Kai, C.; Haokai, L. (2016).Factors Affecting Consumers' Green Commuting. Eurasia J. Math. Sci. Technol. Educ.12, 527–538.

Kim, H.Y.; Chung, J.E. Consumer Purchase Intention For Organic Personal Care Products. J. Consum. Mark.2011, 28, 40–47.

Lanzini, P.; Testa, F.; Iraldo, F (2016) Factors Affecting Drivers' Willingness To Pay For Biofuels: The Case Of Italy. J. Clean. Prod. 112, 2684–2692

Mei, O.J.; Ling, K.C.; Piew, T.H. (2012) .The Antecedents Of Green Purchase Intention Among Malaysian Consumers. Asian Soc. Sci. 8, 248–263.

Norasibah Abdul, Hamidah Yusof, Norimah Rambeli@Ramli, Norsamsinar Samsudin, & Zainizam Zakariya. (2015). The Expenditure Behavior of the Economic Literates. *International Business Education Journal*, *8*(1), 95–104.

Norimah Rambeli@Ramli, Dayang Affizzah Awang Marikan, Noor Al Huda Abdul Karim, Emilda Hashim, & Asmawi Hashim. (2015). The Influence Of 4P Marketing On Housewives ' Spending Patterns In Malaysia. *Malaysian Journal of Society and Space*, *11*(7), 116–124.

Nuttavuthisit, K., & Thøgersen, J. (2017). The Importance of Consumer Trust for the Emergence of a Market for Green Products: The Case of Organic Food. *Journal of Business Ethics*, *140*(2), 323–337. https://doi.org/10.1007/s10551-015-2690-5

Rezai, G., Kit Teng, P., Mohamed, Z., & Nasir Shamsudin Senior Lecturer, M. (2013). Going Green: Survey of Perceptions and Intentions Among Malaysian Consumers. *International Business and Management*, *6*(61), 104–112. https://doi.org/10.3968/j.ibm.1923842820130601.1125

Rizman Raheem Ahmed, Mujtaba Zamir, Shamil Yazdani, & Mehmood Salahuddin. (2016). Factors Impacting the Buying Behavior of Housewives towards Hypermarkets in Karachi. *Information and Knowledge Management*, *6*(April), 12–18.

Syazwani Mohd Bakri, Norimah Rambeli@Ramli, Emilda Hashim, Maryam Mahdinezhad & Norasibah Abdul Jalil. (2017). Understanding Behavior of Consumption Expenditure of Households Understanding Behavior of Consumption Expenditure of Households. *International Business Education Journal*, *10*(1), 43–52.

Tahir Albayrak, Meltem Caber, L. M. & R. H. (2011). The Influence Of Skepticism On Green Purchase Behavior. *International Journal of Business and Social*, *2*(13), 189–197.

Yadav, R.; Pathak, G.S. (2016).Young Consumers' Intention Towards Buying Green Products In A Developing Nation: Extending The Theory Of Planned Behavior. J. Clean. Prod. 2016, 135, 732–739.