

ECOLOGICAL CONSCIOUS BEHAVIOUR IN MALAYSIA: THE CASE OF ENVIRONMENTAL FRIENDLY PRODUCTS

Nor Asiah Omar^{1*}
Lokhman Hakim Osman¹,
Syed Shah Alam¹,
Abdullah Sanusi¹

¹School of Management, Faculty of Economics and Management,
National University of Malaysia, 43600 Bangi UKM, Selangor, Malaysia
(norasiah@ukm.edu.my)

Abstract

As more people become aware of the destruction of natural resources, more are willing to purchase green products that are not harmful to the environment. This study aims to develop and test a model investigating how environmental concern, perceived consumer effectiveness and religiosity enhance ecological conscious behaviour (ECCB). Furthermore, this study will also examine the relationship between ecological conscious behaviour and purchase intention towards environmentally friendly products. A total of 211 questionnaires were collected from consumers of environmentally friendly products in Malaysia. The structural equation model that assessed the relationship between the proposed variables was tested using AMOS. This study found that religiosity, environmental concern and perceived consumer effectiveness has a significant positive influence on ecological conscious behaviour. In addition, the positive relationship between ecological conscious behaviour and purchasing intention towards environmentally friendly product were also significant. The results highlight the crucial role of ecological conscious behaviour in influencing purchase intention among consumers

of environmentally friendly products.

Keywords: *perceived consumer effectiveness; ecological conscious behaviour; environmental friendly products; religiosity; intention*

Introduction

In this century, the earth's environment has undergone severe destructive changes such as global warming, deforestation, water pollution, air pollution and acid rain. In the late 1980s, the National Anxiety Centre reported that environmental issues represented half of the top-ten worry list. According to the report in The Compendium of Environment Statistics Malaysia 2010, the environmental issue is the twelfth issue released by the Department of Statistics, Malaysia.

In the past few decades, there has been a rise in the awareness of the destruction of natural resources and the issues of environmental protection. This has created a positive evolution in pro-environmental knowledge, attitudes and behaviours among consumers (Awad, 2011) that have subsequently created an eco-friendly consumption called "green consumerism" (Moisander, 2007).

According to Akehurst et al. (2012), the 1990s were considered the “decade of the environment” or “the Earth decade” and it was during these years that social and environmental concerns became more relevant. As a result, consumers nowadays have become more concerned with their purchasing decision and the impact of consumer behaviour to the environment.

As green products gained popularity in the market, more consumers have looked for greener products (Nimse et al., 2007) that are not harmful to the environment (Chen, 2010). It is expected that future growth in consumption must respect planetary boundaries and be “green” or sustainable (OECD, 2011). Some recent research on green product purchase includes hybrid cars, electronics, organic food and beverages (e.g. Della Lucia et al., 2007; Gupta & Ogden, 2009; Oliver & Lee, 2010; Pickett-Baker & Ozaki, 2008; Roos & Nyrod, 2008; Salam, 2008; Tsay, 2010; Thogersen, de Barcellos, Perin & Zhou, 2015). Furthermore, the present era of the sustainable development has also stimulated the attention towards environmental concern such as green marketing and corporate social responsibility. Recently, the concept such as ecologically conscious behaviour (ECCB) emerged across the world as an important factor influencing consumer behaviour (Akehurst et al., 2012).

According to do Paco and Raposo (2009), social and environmental concerns took on great importance for consumer purchasing decisions. Therefore, it is crucial for firms to apply and implement this new phenomenon with creative and innovative ways, by incorporating these newly emerging concerns in their management and marketing decision making (Rivera-Camino, 2007). As greater attention are devoted to the

relationship between consumer behaviour, marketing and the environment, numerous studies involving environmental issues and consumer behaviour were carried out, such as public awareness about environmental aspects (do Paco & Raposo, 2009); environmental segmentation alternatives (Awad, 2011; do Paco & Raposo, 2009), and green purchase behaviour (Akehurst et al., 2012). Based on past studies (e.g. Bang et al., 2000; Paco & Raposo, 2009), consumers were more likely to buy green products if they were more closely involved with the environment. It is also found a positive relationship between environmental attitude and environmental behaviour (Kotchen & Railing, 2008). Moreover, the role of religiosity is also believed to affect environmental behaviours. Past studies revealed that religiosity played an important role in affecting ethical attitudes such as student cheating (Allmon et al., 2000), environmentalism (Wolkomir et al., 1997) and attitudes toward owning/using certain goods and services (Shah Alam et al., 2011). In fact, Fowler (2003) suggested that it was possible for religion to exert positive or negative influence towards environmental behaviour. Interestingly it is found that, Japanese folk religion and Shinto, Buddhism and Confucianism have sought to maintain a state of harmony with nature, with the aim of achieving spiritual satisfaction (Randerson, 2015). It is suggested that one’s religious background might affect the degree of sensitivity a culture feels towards “nature” and all it encompasses.

Despite the numerous studies, the relationship between environmental knowledge, attitudes and behaviours is mixed (Chen and Chai, 2010). It is noted that from consumers who claimed to be environmentally concerned; only a few are willing to act at their personal expense

by sacrificing lifestyles and income to purchase environmentally friendly products. In addition, there have been no attempts to relate religiosity, ecological conscious behaviour and purchase intention in the context of green marketing involving developing country like Malaysia, which represents a significant gap of knowledge. As most developing countries are facing great challenges in ensuring a balance between development and environmental sustainability, it is important to investigate ecologically conscious behaviour among consumers. The ways to preserve the Earth's resources not only depend on the action of government and firms but also a change in attitude and behaviours of consumers to contribute to the sustainable nature resources. The above-mentioned problems and the gaps in the present literature point to the purpose of examining the influence of environmental concern, perceived consumer effectiveness and religiosity on ecologically conscious behaviour (ECCB) among consumers in Malaysia. Moreover, this study also investigates the relationship between ecological conscious behaviour and purchase intention toward environmentally friendly products.

Literature review

Green Marketing

Green marketing encompasses much more than just a marketing hype, although there are not a single 'right' definitions to this term, any definitions must include the fact that there is a voluntary exchange between business and the customer who achieve each side's objectives while minimizing the negative impact to the environment as much as possible (Kurniastuti, 2014). Although the discussion of green marketing began in the 1960s, it was in the late

1980s and early 1990s that the concept begins to be formalized and generalized (Akehurst et al., 2012). Green behaviour or environmental behaviour is related to a person who involves himself in pro-environmental behaviours that are beneficial for the environment, recyclable or conservable, sensitive or responsive to ecological concerns (Mostafa, 2007). Today, many firms have embraced the era of green marketing and used environmental issues as a source of competitive advantage in their business operation. According to Tan (2011), to remain competitive within the market, firms would have to become more environmentally and socially responsible. The American Marketing Association (AMA) defines green marketing as the marketing of products that are presumed to be environmentally safe, incorporates several activities such as product modification, changes to production processes, and packaging, advertising strategies and also increases awareness on compliance marketing amongst industries. Whereas Business Dictionary defines green marketing as promotional activities aimed at taking advantage of changing consumer attitude toward a brand (Yazdanifard & Mercy, 2011).

Perceived Consumer Effectiveness (PCE)

The concept of perceived consumer effectiveness (PCE) was first described by Kinnear, Taylor and Ahmed (1974) as a measure of an individual belief that he or she can have an effective contribution on pollution abatement. Furthermore, the level of PCE has been found to form an inverse relationship to the level of knowledge of a subject, particularly in the environmental area (Byrne & Rosenberger III, 2001). Similarly, it means; the more one knows

about an issue, the more one feels the ability to affect the solution. According to Tan (2011), among the top 10 predictors of environmental concern, PCE was found to be the best predictor of environmental concern. As some people believe that their actions result, in particular, outcomes and thus bring about changes, while others have little confidence of their ability to cause a change. Hence, some individual who felt strongly that his or her individual efforts could be useful in pollution abatement exhibited a higher environmental concern than the average individual. PCE is a situation or issue-specific that a personal belief might be formed through the influence of more general or abstract value orientations (Kim & Choi, 2005). Awad (2011) found that perceived consumer effectiveness was significant and positively related with ecologically conscious behaviour. Similarly, Webster (1975) found that PCE was a significant predictor of socially conscious consumer index and was positively related to socially responsible consumption behaviour (Antil, 1984).

Environmental Concern (EC)

Environmental concern has various definitions, which depends on perspective as well as on its complicated and unstable nature (Chan & Lau, 2004). Ester and van der Meer (1982: 72) define the environmental concerns “as the degree to which a person recognizes environmental problems and is ready to contribute towards their solution.” According to Dunlap and Jones (2002: 485), environmental concern indicates “the degree to which people are aware of problems regarding the environment and support efforts to solve them and or indicate the willingness to contribute personally to their solution.” Diamantopoulos et al. (2003) refers

environmental concerns as a major factor in consumer decision-making process. However, Chan and Lau (2000) measure environmental concern as a uni-dimension as they have adopted from a previous study by Maloney et al. (1975). Thus, most definitions of environmental concern were attached to the degree of emotionality a person is attached to environmental issues.

Kalafatis, Pollard, East and Tsogas (1999) further described environmental concern as the awakening and awareness of consumers in the fact that the environment is in danger and that natural resources are limited. The increasing number of consumers with environmental concerns might be reflected by the increasing number of intentions to purchase green products. Environmental concerns may be multifaceted; it may be more influential for some behaviour, and it can be reflected in consumers’ daily activities (Kalafatis et al., 1999). Based on this study, past studies defined environmental concerns as the level of emotional and commitment towards environmental issues (Aman et al., 2012).

Religiosity (R)

Religion is seen as a subsystem of culture and value, which is regarded as a way of life that encourages people to strive for the other values (Mokhlis, 2006). Recent data collected between 2002 and 2006 found that approximately 84% of Americans believe that religion is important to their lives (Hernandez, 2011). Accordingly several researchers noted that religion dictates the lifestyle of religious individuals (Shaari & Afrin, 2010) and attitude towards products (Marzouki Rani, 2015). Many define religiosity as both beliefs and practices relating to an organized religious affiliation or a specified divine power (Pargament,

1997). Based on previous researches, the more religious a person is, the more likely the person's life is confined by law and social behaviour (Siu et al., 2000; Smith & Oakley, 1996). Most religions in different cultures around the world encourage values, norms, and expectations of what is right or wrong and guide people to behave ethically (Tang, 2012). Interestingly, Kalland (2002) noted that some religions had no relation with environmentally ethical behaviour and some religions actually encourage humans towards environmental destruction. In Malaysia, a majority of the population practice Islam (approximately 61.3% of the population) and Islam is the state religion. As one of the fastest growing religion group in the world (Lipka & Hackett, 2015), Islam preaches mankind to be in harmony with nature. It is manifested in Islam that everything on the earth was created for humankind; it was God's gift (ni'mah) to mankind, but a gift with conditions to be used with (ihsan) in its broadest sense (Khalid, 2002). Interestingly it is noted that, those staying in a Muslim majority country are likely to adjust their behaviour and act in ways that are more consistent with Islamic religious precepts (Adamczyk & Hayes, 2013). Fowler (2003) suggested that it was possible for religion to exert positive or negative influence towards environmental behaviour. A recent study suggested that self-identified Christians reported lower levels of environmental concern than do non-Christians. Nonetheless, among Christians, religiosity relates positively to pro-environmental behaviours but not to pro-environmental attitudes or beliefs (Clements et al., 2014).

Ecologically Conscious Behaviour (ECCB)

Ecological conscious focuses on a specific

dimension of consumer behaviour. This dimension refers to consumers' purchase intention and their willingness to pay a higher price for ecological products (Laroche et al., 2001). According to Roberts (1996), a consumer can be considered ecologically conscious if they purchase goods and services which they believe to have a positive or a less negative effect on the environment. Ecological behaviour can be generated by factors such as the desire to save money (manifested by the reduction in consumption of energy and water), and other psychological factors (when consumers feel this is the right way to behave). This features two categories of ecological consumers: (1) the ones who are constraint to adopt an ecological behaviour (example: an increase in prices determines a decrease in consumption), and (2) the ones who are willing to pay more for ecological products (Ahmad et al., 2012). Environmentally conscious consumers realize that the development, production, distribution, consumption and even the disposal of any product places a heavy burden on the environment and causes additional costs. Thus, they strive to minimize these negative effects and additional costs. Meffert and Kirchgeorg (1993) identified five types of behaviour which an environmentally conscious consumer might choose: (1) Reducing the consumption of traditional goods, (2) Adjusting demand – purchasing eco-friendly products instead of traditional ones, (3) Consuming environmentally efficient goods, (4) Participation in recycling, in separating waste collection, (5) Environmentally conscious complaints or protests. Recent empirical studies suggest that women are more sensitive to environmental issues, and they tend to give a greater priority to them, compared with men (Koivisto Hursti & Magnusson, 2003; Storstad & Bjorkhaug, 2003).

Moreover, female consumers are also likely to choose products or services based on ecological criteria (Ahmad, 2012). Some research shows that there are consumers who prefer companies that are dedicated to social responsibility, as long as there are no major differences in terms of their quality (Ahmad et al., 2012).

Several studies performed by previous researchers (e.g. Chen & Chai, 2010) found that there is an increased demand for green products in the Malaysian market. A market survey from one of the leading market surveys involving service companies suggests that, green consumers in developing countries show high willingness to support green consumerism in comparing to the other Asia-Pacific countries (Mei et al., 2012). Moreover, consumers from the emerging markets in the region are more willing to pay more for green products (Lung, 2010). Nearly 95% of Thai consumers and over 80% of Malaysian and Korean consumers are willing to pay more while less than 60% of consumers from Hong Kong and Australia show willingness to pay more environmentally friendly products (Lung, 2010).

Purchase Intention (PI)

Purchase intention refers to “the likelihood that a consumer would buy a particular product resulting from his or her environmental needs” (Netemeyer et al., 2005). Purchase intention is a prediction about consumers’ attitudes, which can affect the buying decision and purchase behaviour of customers in the future (Ajzen, 1985). Furthermore, purchase intention is considered to be a forecasting instrument in market research (Nguyen, 2011). Actions of favourable post-purchase behavioural intentions included positive word-of-mouth

(Boulding et al., 1993), recommending the company or services to others (Reichheld & Sasser, 1990), and staying loyal to the company (LaBarbera & Mazursky, 1983).

Purchase intention is something that most organic food manufacturers focus on since it helps them identify the behaviour of customers and their perceptions of the products (Magistris & Gracia, 2008). The link between attitudes, intention and behaviour has been explained primarily by Ajzen (1985) who examined the positive relationship between customer attitude and intention to buy the organic food. Most of the past studies (e.g. Lea & Worsley, 2008; Magnusson et al., 2001) suggested that customers interested in organic food have positive attitudes toward organic food, which can lead to actual purchase action (Wandel & Bugge, 1997).

Kim and Choi (2005) point out that it is much more probable that people who are highly concerned about environmental issues will purchase environmentally friendly products than those who are less concerned. Many studies are also based on the assumption that the degree of environmental concern has a direct and strong influence on people’s behaviour with regard to recycling and energy-saving, environmentally friendly product purchase or travel mode choice (Bamberg, 2003).

Research Model and Hypotheses

The framework of this study is shown in Figure 1. The main objective of the study is to investigate if environmental concern, perceived consumer effectiveness and religiosity are key factors that contribute to ecologically conscious behaviour among consumers in Malaysia. This study also aims to examine the relationship between

ecological conscious behaviour and purchase intention toward environmentally friendly products. The theoretical framework is based on past studies (Awad, 2011; do Paco & Raposo (2009) and the following hypotheses are proposed:

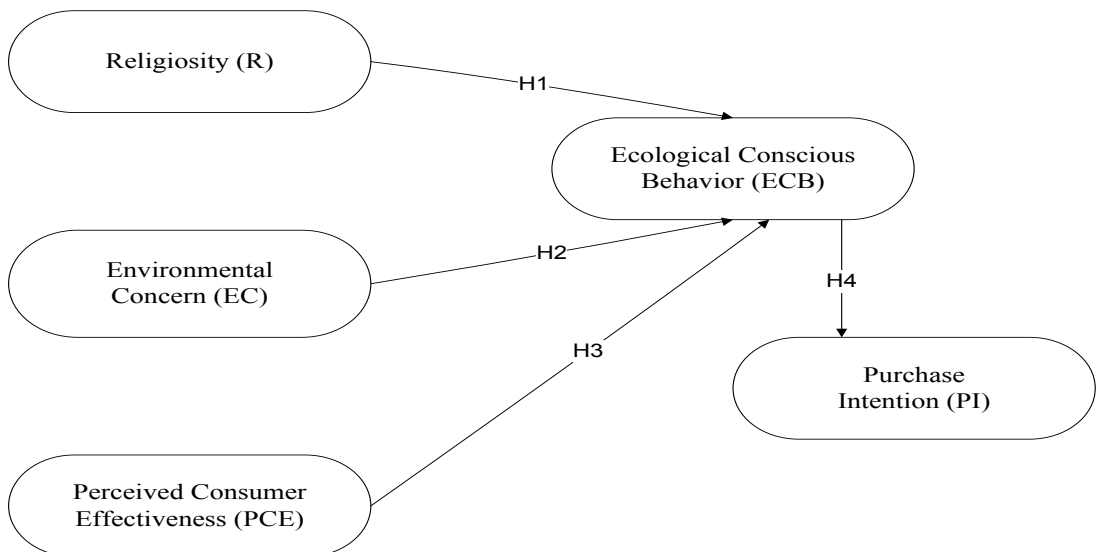
- H1:** Religiosity is related to ecologically conscious behaviour (ECCB)
- H2:** Environmental concern (EC) is related to ecologically conscious behaviour (ECCB).
- H3:** Perceived consumer effectiveness (PCE) is related to ecologically conscious behaviour (ECCB).
- H4:** Ecologically conscious behaviour is related to purchasing intention (PI) toward environmentally friendly products.

Research Methodology

Sampling Design, Subjects and Procedures

The target population of the study comprises of consumers, who are above 18 years of age, and who live or work within Klang Valley, Malaysia. The reason for choosing Klang Valley is because of its strategic location where the capital of Malaysia, Kuala Lumpur, is situated. The Federal Territory of Kuala Lumpur has the highest population density in the Malaysia, i.e., about 6,500 people per square kilometre. This metropolitan city is situated in the state of Selangor, which is one of the 14 states in Malaysia that is experiencing the fastest rise in population density as it benefits from the rapid development of Kuala Lumpur and the spill-over of residents across the state boundary which surrounds the Federal Territory (Euromonitor International, 2011). Moreover, it is expected that the population in urban area will have the most exposure to adopt the green activities as they will be more exposed to environmental issues (Mohamad et al., 2014)

Figure 1: Proposed Research Model



Self-administered questionnaire and convenient sampling methods were used for data collection. A total of 243 responses were collected. After data cleaning and editing, the final count of questionnaires with no missing values for all variables under analysis was 211, representing a response rate of 87 percent. Table 1 summarizes the respondents' profile for the study.

The participants of this study were predominantly female (60%); 32% of the respondents had a household income of between RM4, 000 to RM5, 999; and 40% of the respondents were aged between 30 to 39 years of age; 60% of the respondents were married, 55% of the respondents attained a Bachelor degree, and 47% of the respondents had the experience of buying environmentally friendly products.

Table 1: Respondents' Profile

Variable	Level	Percentage
Gender	Male	40
	Female	60
Age	Less than 20	2
	20 to 29	27
	30 to 39	40
	40 to 49	25
	50 and above	6
Marital status	Single	37
	Married without children	18
	Married with children	42
	Widowed/divorced	3
Income	Less than RM2,000	11
	RM 2,000 to RM 3,999	24
	RM 4,000 to RM 5,999	32
	RM 6,000 to RM 7,999	13
	RM 8,000 to RM 9,999	11
	RM 10,000 and above	9
Education	High School	12
	Certificate/Diploma/STPM	27
	Bachelor Degree	55
	Post Graduate	8

Measures

The items of the construct were measured on 5-point Likert scales ranging from 1=*strongly disagree* to 5=*strongly agree* on response scale, except for respondent information, which is measured by a categorical scale. All the constructs were adopted and adapted from the prior study. Environmental concern scale which consists of six items (includes items such as “*live in harmony with nature in order to survive*” and “*balance of nature is very delicate*

and easily upset”) were adapted from Awad (2011). Four items used to measure perceived consumer effectiveness were adapted from Awad (2011) and includes items such as, “*When I buy products, I try to consider how my use of them will affect the environment and other consumers*” and “*Each consumer’s behaviour can have a positive effect on society by purchasing products sold by socially responsible companies*”. Religiosity was assessed with eight items derived from scale developed by Plante and Boccaccini (1997) (such as

“I consider myself active in my faith” and *“My religious faith is extremely important to me”*). Ecological conscious behaviour was measured with seven item scales used in previous research (Awad, 2011). An example of ecological conscious behaviour items were, *“I have tried very hard to reduce the amount of electricity I use”* and *“I try to buy energy efficient household appliances.”* Purchase intention was measured with five items developed by Tao and Zhou (2012). Example of items include, *“I am likely to buy green product in the future”* and *“I have every intention to buy a green product in the future.”*

Data Analysis

Confirmatory Factor Analysis and Structural Model

A two-step approach was employed to analyse the data; examination of the measurement model was followed by an examination of the structural model used to test the hypothesized relationships (Anderson & Gerbing, 1988). The Structural Equation Modeling (SEM) procedure enabled us to evaluate how well a proposed conceptual model that contained observed variables and unobservable constructs fit the collected data (Bollen, 1989). A confirmatory factor analysis (CFA) was conducted to test the robustness and reliability of the scales (via AMOS and the maximum likelihood estimation technique), to confirm the factor loading of the five constructs (i.e., religiosity, environmental concern, perceived consumer effectiveness, ecologically conscious behaviour and purchase intention), and to assess the model fit. Structural equation modelling was conducted to assess the overall fit of the proposed model and test the hypotheses.

For the measurement model (CFA), Table 2 presents the correlation matrix, descriptive statistics, Cronbach's alpha reliability coefficients, composite reliability and average variance extracted (AVE) of the measurement. The Cronbach's alpha reliability coefficients were within the range of 0.60 to 0.96 and exceeded the minimum acceptable value (0.60) indicated by Hair (2006). This instrument presented internal reliability. In addition, the correlation index among factors is low and moderate; this implies that discriminant validity is attained (Churchill, 1995). As a rigorous test of discriminant validity (see Fornell & Larcker 1981), the average variance extracted (AVE) for each construct ranged were above the suggested value of 0.5 (except for environmental concern). Furthermore, construct reliability estimates exceeded the critical value of .70 (except for environmental concern), indicating a satisfactory estimation. After evaluating the reliability and meaningfulness of the measurement model, the structural model among the constructs were tested.

Based on the model fit results, the Chi-square was significant ($\chi^2 (145) = 316.92, p < 0.001$), however, reliance on the chi-square test as a sole measure of fit in a structural equation model is not recommended due to sensitivity to sample size. Given its sensitivity to sample size, a variety of fit statistics were applied to assess the “goodness of fit” of the model. Measures of fit included the Comparative Fit Index (CFI), the Goodness of Fit Index (GFI), the Normed Fit Index (NFI), and the Root Mean Square Error of Approximation (RMSEA). The three fit indexes CFI, GFI and NFI (CFI = .94, GFI = .90, and NFI = .90) are equal or even exceeded the recommended level of .90 representing a reasonable fit (Byrne, 2013).

	R	EC	PCE	PI	ECCB
Religiosity (R)	0.82				
Environmental Concern (EC)	0.03	0.38			
Perceived Conscious Effectiveness (PCE)	0.01	0.372**	0.56		
Purchase Intention (PI)	0.26**	0.161*	0.08	0.73	
Ecologically Conscious Behaviour (ECCB)	0.18**	0.02	0.20**	0.31**	0.59
α	0.96	0.60	0.71	0.93	0.85
Composite reliability	0.96	0.62	0.71	0.93	0.85
Mean ^a	4.02	3.97	2.44	3.99	3.34
SD	1.00	0.633	1.07	0.73	0.81

Notes: ^a = These mean figures are based on each summated scale score divided by the number of items in each scale, for ease of interpretation. SD= Standard Deviation

AVE is represented on the diagonal ** Correlation is significant at the 0.01 level (2-tailed)

The RMSEA is the least affected by sample size (Hu & Bentler, 1995); the value of the RMSEA equals .07 which is within the recommended cut-off value of .08. Therefore, in overall, the data indicate an excellent fit for our hypothesised model (refer to Figure 2).

Based on Table 3, all the hypotheses are supported. With respect to testing the relationships among religiosity, environmental concern, perceived consumer effectiveness and ecologically conscious behaviour, perceived consumer effectiveness (PCE) served as the strongest predictor of ecologically conscious behaviour (ECCB) ($\gamma = .40, t=2.96, p<0.01$), supporting H3.

Religion(R)andenvironmentalconcern(EC) were also found to significantly affect ecologically conscious behaviour (ECCB) ($\gamma = .17, t=2.26, p<0.01$) and ($\gamma = .26, t=1.91, p<0.10$), supporting H1 and H2 respectively.

As expected, ecologically conscious behaviour was positively associated with purchase intention ($\beta=.35, t=4.55, p<.01$) supporting H4. The results show that consumers who have high ecologically conscious behaviour would have a higher intention to purchase environmentally friendly products.

Table 3: Hypotheses Tests

Hypothesized Path		Standardized Coefficient	Critical Ratio (t-value)	Results
H1	Religiosity – Ecologically Conscious Behaviour	.17	2.26***	Supported
H2	Environmental Concern – Ecologically Conscious Behaviour	.26	1.91*	Supported
H3	Perceived Consumer Effectiveness – Ecologically Conscious Behaviour	.40	2.96***	Supported
H4	Ecologically Conscious Behaviour - Purchase Intention	.35	4.55***	Supported

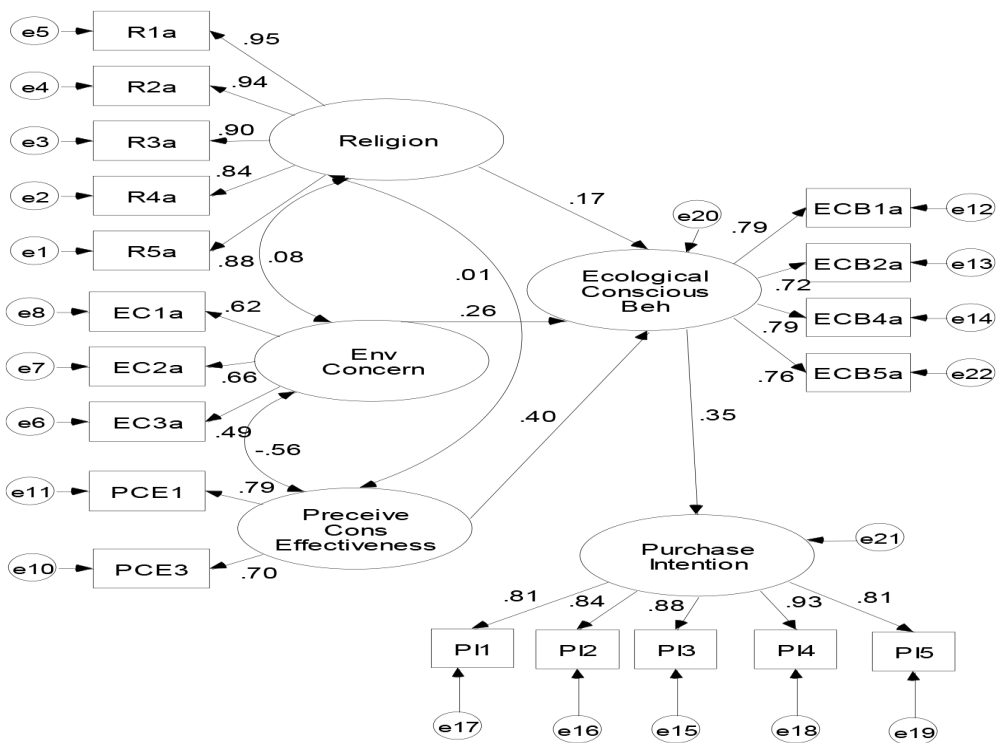
Notes: *** Significant at $p<0.01 (t > \pm 2.57)$, ** Significant at $p<0.05 (t > \pm 1.96)$, * Significant at $p<0.10 (t > \pm 1.65)$, ^a Non-significant

Discussion

All three independent variables are significantly related to ecologically conscious behaviour (ECCB). The findings of the study revealed that the most important attribute to ecologically conscious behaviour was perceived consumer effectiveness. Consumers' attitudes and behaviour in responses to environmental problems can positively influence ecological conscious behaviour.

In line with past studies, perceived consumer effectiveness is positively correlated with ecologically conscious behaviour (Awad, 2011; Roberts, 1996). When an individual felt strongly that his or her individual efforts could be useful in reducing pollution, they tend to exhibit higher environmental concern behaviour than the average individual.

Figure 2: Results of the Structural Model



The second most significant factor that contributes to ecologically conscious behaviour is religiosity. Based on past studies, degree of religiosity is generally associated with higher ethical attitudes (Koys, 2001, Calkins, 2000). It is also suggested that, religion dictates the lifestyle of religious individuals (Shaari & Afrin, 2010) and attitudes toward owning/using certain goods and services (Marzouki Rani, 2015; Shah Alam et al., 2011).

In addition, ecologically conscious behaviour was found to be positively influencing purchase intention toward environmentally friendly products. This indicates that consumers who are concerned and conscious of environmental problems are willing to act by purchasing environmentally friendly products. The relationship is in accordance with previous studies that suggest consumers who are more concerned about the environmental issues, express more willingness to pay higher prices for environmental friendly products (Bang et al., 2000) and will be more willing to purchase environmental friendly products than those who are less concerned (Kim & Choi, 2005). Results from this study reveal that Malaysian consumers are becoming more concerned with environmental issues. Consumers who are concerned with environmental problems are more likely to buy environmentally friendly products.

Implications

This study presents introductory research which explains 35 percent of the variance in purchase intention of environmentally friendly products. The combination of religious, environment concern and consumer effectiveness in a single study provides powerful insights into the relative importance of each factor in enhancing

ecological conscious behaviour and purchase intention, which are highly important when dealing with environmental friendly products. This research can serve as a starting point for other ecologically conscious and green marketing research while encouraging further exploration and integration additional adoption constructs. Future research needs to focus on a larger cross section and more diversified random samples to verify the findings of the current research. Moreover, to the further clarity of the factor influence on the attitude toward environmentally friendly products in businesses, other factors and model could be used.

From the practical implications, it is noted that the Malaysian government has provided great emphasize on green practice in order to be sustainable. To implement the 'Green Malaysia' framework under the Malaysia Green Technology Policy, today's businesses are expected to be responsible in satisfying the human needs and wants while preserving nature. In embracing the sustainability agenda, more businesses are confronting ecological challenges, particularly local businesses in Malaysia are formulating strategies that control pollutions and preserve the natural resources. It is recommended that the government as well as non-governmental agencies to play an active role in encouraging more consumers to go green and buy environmentally friendly products. Support and involvement through various environmental activities and campaigns will contribute to a better awareness of green products and services. Furthermore, marketers should play their part to ensure that their products are of high quality and competitively priced. Providing adequate information and conducting green promotion marketing strategy can increase the awareness and educate consumers

about the concept of environmental protection. In fact, the integration of environmental concern in a product will help to create a distinctive position for the product in the market with an added value.

Conclusion

The aim of this study is to examine the factors affecting ecologically conscious behaviour (ECCB) among consumers in Malaysia and purchase intention toward environmentally friendly products. This study also contributes to and extends our understanding of the role of religiosity, environmental concern, and perceived consumer effectiveness towards consumers' purchase intention for ecological products. From a managerial point of view, the findings provide support for investment decisions relating to the enhancement of environmentally friendly products.

This research was done under a theoretical framework that was developed based on the previous research findings. The results show that perceived consumer effectiveness, religiosity and environmental concern are very important elements of ecological conscious behaviour. It is also found that ecological conscious behaviour is positively related to purchase intention to use environmentally friendly products. As the Malaysian government is encouraging more businesses to adapt the concept of sustainability and green agendas, an understanding of the factors that influence consumer's intention to use environmentally friendly products is invaluable.

Limitations

Any preliminary attempt will involve a number of limitations. However, acknowledgements of these limitations

also suggest a new direction for future research. Firstly, the data collection is not random and relies primarily on a sample drawn specifically from a limited geographical area in Malaysia. Using convenience sampling, the findings may not represent the entire population and may require replication. Due to the limitations, further investigation could also focus on comparing different segments or different cultures on ECCB and purchase intention towards environmentally friendly products.

Acknowledgements

I would like to thank the chief editor and anonymous reviewers for helpful comments on an earlier version of the paper. This research has been benefiting from the Universiti Kebangsaan Malaysia

References

- Adamczyk, A. and Hayes, B. (2012), "Islamic cultures, religious affiliation and sex outside of marriage", *American Sociological Review*, 77(5), 723-746.
- Ahmad J., Ali I., Grigore G.F. and Stancu A. (2012), "Studying Consumers' Ecological Consciousness – A Comparative Analysis of Romania, Malaysia and Pakistan", *Amfiteatru Economic*, 14(31), 84-98.
- Akehurst G., Afonso C. and Goncalves H.M. (2012), "Re-examining green purchase behaviour and the green consumer profile: new evidences", *Management Decision*, 50(5), 972-988.

- Allmon, D.E., Page, D. and Roberts, R. (2000), "Determinants of perceptions of cheating: Ethical orientations, personality and demographics", *Journal of Business Ethics*, 23, 411-422.
- Aman A.H.L., Harun A. and Hussein Z. (2012), "The Influence of Environmental Knowledge and Concern on Green Purchase Intention the Role of Attitude as a Mediating Variable", *British Journal of Arts and Social Sciences*, 7(11), 145-167.
- Antil J.H. (1984), "Socially responsible consumers: Profile and implications for public policy", *Journal of Macromarketing*, 4, 18-39.
- Anderson, J. C. and Gerbing, D. W. (1988), "Structural equation modeling in practice: A review and recommended two-step approach," *Psychological Bulletin*, 103, 411-423.
- Awad, T.A. (2011), "Environmental segmentation alternatives: buyers' profiles and implications", *Journal of Islamic Marketing*, 2(1), 55-73.
- Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior* (pp. 11-39). Springer Berlin Heidelberg.
- 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.
- Bang, H., Ellinger, A.E., Hadjimarcou, J. & Traichal, P.A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: an application of the reasoned action theory. *Psychology and Marketing*, 17, 6-26.
- Bollen, K. A. (1989). Structural equation with latent variables. New York, NY: Wiley.
- Boulding, W., Kalra, A., Staelin, R. and Zeithaml, V.A. (1993), "A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions", *Journal of Marketing Research*.
- Byrne M.R. and Rosenberger P.J. III (2001), "Perceived Consumer Effectiveness and Water Quality in Newcastle", University of Newcastle.
- Byrne, B. M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Routledge.
- Calkins, M. (2000), "Recovering religion's prophetic voice for business ethics", *Journal of Business Ethics*, 23, 339-352.
- Chan, R. Y., and Lau, L. B. (2004). The effectiveness of environmental claims among Chinese consumers: influences of claim type, country disposition and ecocentric orientation. *Journal of Marketing Management*, 20(3-4), 273-319.
- Chen, Y.-S. (2010), "The drivers of green brand equity: green brand image, green satisfaction, and green trust", *Journal of Business Ethics*, 93(2), 307-19.
- Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: consumers' perspective. *Management science and engineering*, 4(2), 27-39.

- Cheah I. and Phau I. (2011), "Attitudes towards environmentally friendly products: The influence of Eco literacy, interpersonal influence and value orientation", *Marketing Intelligence & Planning*, 29 (5), 452 – 472.
- Chen T. B. and Chai L. T. (2010), "Attitude towards the Environment And Green Products: Consumers' Perspective", *Management Science and Engineering*, 4(2), 27-39.
- Churchill, G. A. (1995). *Marketing research: Methodological foundations*. Forth Worth, TX: The Dryden Press
- Clements, J. M., McCright, A. M. and Xiao, C. (2014), "Green Christians? An Empirical Examination of Environmental Concern within the U.S. General Public", *Organization & Environment*, 27(1), 85-102.
- Della Lucia SM, Minim VPR, Silva CHO, Minim LA. (2007), "Organic coffee packaging factors on consumer purchase intention", *Ciencia Tecnol Aliment*, 27(3), 485–491.
- Diamantopoulos A., Schlegelmilch B.B., Sinkovics R.R. and Bohlen G.M. (2003), "Can social-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation", *Journal of Business Research*, 465-480.
- Do Paco A. and Raposo M. (2009), "Green Segmentation: an application to the Portuguese consumer market", *Marketing Intelligence & Planning*, 27 (3), 364-379.
- Dunlap R.E. and Jones R.E. (2002), "Environmental Concern: Conceptual and Measurement Issues", *Handbook of Environmental Sociology*, 482-524.
- Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(Feb), 39–50.
- Fowler, D. (2003), "Religiosity as a predictor factor against drug taking behaviour among African – American adolescent, the 131 st Annual Meeting.
- Gupta S, Ogden D.T. (2009), "To buy or not to buy? A social perspective on green buying. *Journal of Consumer Marketing*, 26(6), 378–393.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., and Tatham, R. L. (2006). SEM: confirmatory factor analysis. *Multivariate data analysis*, 6, 770-842.
- Hernandez, Brittany. C. (2011). The Religiosity and Spirituality Scale for Youth: Development and Initial Validation. Dissertation. The Department of Psychology Louisiana State University.
- Hu, L. T., & Bentler, P. M. (1995). Evaluating model fit.
- Kalafatis S. P., Pollard M., East R. and Tsogas M. H. (1999), "Green Marketing and Ajzen's Theory of Planned Behaviour: A Cross-market Examination", *Journal of Consumer Marketing*, 16(5), 441-460.

- Kalland A. (2002), "Holism and Sustainability: Lessons from Japan. Worldviews", 6(2), 145-158.
- Khalid, F.M. (2002), "Islam and the Environment," in Timmerman M.P. and Munn, T. *Encyclopedia of Global Environment Change*, John Wiley and Sons, 332-339.
- Kinnear T., Taylor J.R. and Ahmed S. (1974), "Ecologically Concerned Consumers: Who Are They", *Journal of Marketing*, 20-24.
- Kim Y. and Choi S.M. (2005), "Antecedents of Green Purchase Behaviour: An Examination of Collectivism, Environmental Concern, and PCE", *Advances in Consumer Research*, 32, 2005.
- Kotchen, M.J. and S.D. Railing, 2008. Environmental attitudes, motivations and contingent valuation of nonuser values: A case study involving endangered species. *Ecol. Econ.*, 32, 93-107.
- Koivisto Hursti, U.-K. and Magnusson, M.K. (2003), "Consumer perceptions of genetically modified and organic foods: what kind of knowledge matters?", *Appetite*, 41, 207-209.
- Koys, D.J. (2001), "Integrating religious principles and human resource management activities", *Teaching Business Ethics*, 5, 121-139.
- Kurniastuti, D. (2014). Pengaruh green marketing terhadap minat pembelian ulang nasi organik (studi pada pelanggan HFC Probolinggo). *Pengaruh green marketing terhadap minat pembelian ulang nasi organik (studi pada pelanggan HFC Probolinggo)/Danti Kurniastuti*.
- LaBarbera, P. A., and Mazursky, D. (1983). A longitudinal assessment of consumer satisfaction, dissatisfaction: The dynamic aspect of cognitive process. *Journal of Marketing Research*, 20(November), 393-404.
- Laroche M., Bergeron J. and Barbaro-Forleo G. (2001), "Targeting consumers who are willing to pay more for environmentally friendly products", *Journal of Consumer Marketing*, 18(6), 503-20.
- Lea, E., and Worsley, A. (2008). Australian consumers' food-related environmental beliefs and behaviours. *Appetite*, 50(2), 207-214.
- Lipka, M. Hackett, C. (2015), "Why Muslims are the world's fastest growing religious group", *Pew Research Center*, April 23.
- Lung, S. (2010). Green Consumerism-The way to effectively differentiate your products in Asia-Pacific Market.
- Magnusson, M. K., Arvola, A., Koivisto Hursti, U. K., Åberg, L., and Sjöden, P. O. (2001). Attitudes towards organic foods among Swedish consumers. *British food journal*, 103(3), 209-227.
- Maloney M.P., Ward M.P. and Braucht G.N. (1975), "A Revised Scale for Measurement of Ecological Knowledge and Attitude", *American Psychologist*, 30(7), 787-790.
- Marzouki Rani, N.S. (2015), "Consumer attitude and purchase intentions toward Islamic banks: The influence of religiosity", *International Journal of Bank Marketing*, 33(2), 143-161.

- Meffert H. and Kirchgeorg M. (1993), "Marktorientiertes Umweltmanagement. Grundlagen und Fallstudien. Stuttgart, Schäffer Verlag."
- Mei, O. J., Ling, K. C., & Piew, T. H. (2012). The antecedents of green purchase intention among Malaysian consumers. *Asian Social Science*, 8(13), 246.
- Mohamad, Z.Z., Tengku Arifin, T.R., Samsuri, A.S. and Mior Badrul Munir, M.F (2014), "Intention to visit green hotel in Malaysia: The impact of personal traits and marketing strategy", *International Journal of Business and Social Sciences*, 5(7), 167-173.
- Mohklis S. (2006), "The Influence of Religion on Retail Patronage Behaviour in Malaysia".
- Moisander J. 2007. Motivational Complexity of Green Consumerism. *International Journal of Consumer Studies*, 31 (4), 404-409.
- Mostafa, M. M. (2007). Gender differences in Egyptian consumers' green purchase behaviour: the effects of environmental knowledge, concern and attitude. *International Journal of Consumer Studies*, 31(3), 220-229.
- Netemeyer, R. G., Maxham III, J. G., and Pullig, C. (2005). Conflicts in the work-family interface: Links to job stress, customer service employee performance, and customer purchase intent. *Journal of Marketing*, 69(2), 130-143
- Nguyen, P. T. (2011). A Comparative Study of the Intention to Buy Organic food between Consumers in Northern and Southern Vietnam. *AU-GSB e-JOURNAL*, 4(2).
- Nimse, P., Vijayan, A., Kumar, A. and Varadarajan, C. (2007), "A review of green product databases", *American Institute of Chemical Engineers*, 26(2), 131-137.
- Oliver JD, Lee S-H. Hybrid car purchase intentions: a cross-cultural analysis. *Journal of Consumer Marketing*, 27(2), 96-103
- Pargament K.I. (1997), "The psychology of religion and coping. New York: Guilford Press".
- Pickett-Baker J, and Ozaki R. (2008), "Pro-environmental products: marketing influence on consumer purchase decision", *Journal of Consumer Marketing*, 25(5), 281-293.
- Plante T.G. and Boccaccini M.T. (1997), "The Santa Clara Strength of Religious Faith Questionnaire", *Pastoral Psychology*, 45, 375-387.
- Randerson, A.K. (2015), "Human sensitivity towards nature: Eastern and Western perspectives", *World Journal of Science, Technology And Sustainable Development*, 12(3), 172-182.
- Reichheld, F. F., and Sasser, W. E. J. (1990). Zero defections: Quality comes to services. *Harvard Business Review*, Sept/Oct, 105-111.
- Roberts J.A. (1996), "Green consumers in the 1990s: profile and implications for advertising", *Journal of Business Research*, 36(3), 217-31.

- Roos A, Nyrud A.Q. (2008), “ Description of green versus environmentally indifferent consumers of wood products in Scandinavia: flooring and decking. *Journal of Wood Science*, 54, 402–7.
- Salam M. (2008), “An empirical investigation of the determinants of adoption of green procurement for successful green supply chain management”, In: Paper presented at the management of innovation and technology.
- Shaari, J.A.N. and Mohd Arifin, N.S. (2010), “Dimension of Halal Purchase Intention: A Preliminary Study”, *International Review of Business Research Papers*, 6(4), 444-456.
- Shah Alam, S., Mohd, R. and Hisham, B. (2011), “Is religiosity an important determinant on Muslim consumer behaviour in Malaysia?”, *Journal of Islamic Marketing*, 2(1), 83 – 96.
- Siu, N. Y.M., Dickinson, J.R. and Lee, B.Y.Y. (2000), “Ethical evaluation of business activities and personal religiousness”, *Teaching Business Ethics*, 4, 239-256.
- Storstad, O. and Bjorkhaug, H. (2003), “Foundations of production and consumption of organic food in Norway: common attitudes among farmers and consumers”, *Agriculture and Human Values*, 20, 51-63.
- Tao and Zhou, (2012). An Empirical Examination of Continuous Intention of Mobile Payment Services, *Journal of Electronic Commerce in Organizations*.
- Tan B.C. (2011), “The Roles of Knowledge, Threat, and PCE on Green Purchase Behaviour”, *International Journal of Business and Management*, 6(12), 14-27.
- Tang, T. L. P., Cunningham, P. H., Frauman, E., Ivy, M. and Perry, T.L. (2012), “Attitudes and occupational commitment among public personnel: Differences between baby boomers and Gen-Xers”, *Public Personnel Management*, 41(2), 327–360.
- Thogersen, J., de Barcellos, M.D., Perin, M.G. and Zhou, Y. (2015), “ Consumer buying motives and attitudes towards organic food in two emerging markets China and Brazil”, *International Marketing Review*, 32(3/4), 389-413.
- Tsay Y-Y. (2009), “The impact of economic crisis on green consumption in Taiwan. In: Paper presented at the PICMET.
- Wandel, M. and Bugge, A. (1997), “Environmental concern in consumer evaluation of food quality”, *Food Quality and Preference*, 8(1), 19-26
- Webster F.E. Jr (1975), “Determining the characteristics of the socially conscious consumer”, *Journal of Consumer Research*, 2, 188-196.
- Yazdanifard R. and Mercy I.E. (2011), “The Impact of Green Marketing on Customer satisfaction and Environmental safety”, *International Conference on Computer Communication and Management*, 5, 637-641.