Affective and Cognitive: Consumers Attitude toward Practicing Green (Reducing, Recycling & Reusing)

Ehsaneh N. M. Nameghi[1] & M. A. Shadi[2]

[1] Graduate School of Business, National University of Malaysia, Bangi, Malaysia

[2] Faculty of Humanity and Social Science, IAU University (Science & Research), Tehran, Iran

Correspondence: Ehsaneh N. M. Nameghi, Graduate School of Business, National University of Malaysia, Bangi, Malaysia. E-mail: ehsaneh_nameghi@yahoo.com

Abstract

Understanding consumers' attitude toward practicing green behavior is vital for business as well as environmental reasons. The purpose of present study is to examine the green practicing concept (reducing, recycling and reusing) in an academic context from affective and cognitive perspective. Sample consisting of 315 university students gathered and analyzed using structural equation modeling technique (SEM). Findings indicate that environmental emotion and environmental cognition were significantly related to consumers' attitude, while attitude had significant impact on consumers practicing green behavior elements namely, reducing, recycling and reusing. Findings of the present study can explain the determinants of practicing green behavior. In addition the findings can be used by public and private sector which encourage pro-environmental behaviors.

The present study has improved the understanding from pro-environmental behavior (reduce, reuse and recycling) and its antecedents from attitudinal approach. In addition present study confirms suitability of TRA as theoretical grounding in pro-environmental behavior studies by employing (SEM) which is theory-testing laden technique (Urbach and Ahlemann, 2010).

Keywords: emotion, cognition, attitude, green behavior, reduce, reuse, recycling

1. Research Background

The role of environmental issues such as pollution becomes crucial in today's world. United Natios report in 2008 announces the death of child in every 20 second because of lack of accessing to clean water and using polluted water. In addition 52% of Asians are facing lack of environmental practices. For instance 95% of Asians for example have not sewage and that cause water and rivers pollutions (Jewitt, 2010). Hence, in order to compete with these types of pollutions, pro-environmental behavior practiced by the governments as well as individuals is required. From individual perspective, a change in attitude can change their behaviors in terms of practicing green 3 environmental "R" s namely, Reduce, Reuse and Recycling.

Changing in behavior requires changes in attitude first; hence many environmental studies have tries to underpin consumers' attitude toward environmental issues. Findings of study conducted in 15 European union countries indicates that their understanding from the concept of "environment" refers to pollution of the cities (25%), while quality of life and proper usage of natural resources weight very low (from 3 to 8 precent) (Eurobarometer 2004-2005). In addition some researchers tried to investigate consumers understanding from practicing green with specifying it to consumers attitude toward recycling as a general (Tonglet *et al.*, 2004) or recycling food wastes in specific (Refsgaard and Magnussen, 2009). Furthermore studies have tried to understand attitudes in waste management system (Begum *et al.*, 2009). Some studies has tried to extend their understanding from consumers green attitudes by shifting from householders to hotel guests (Han *et al.*, 2009) while others shift from consumer level to organization and firm level. This means new perspectives have been added to green research and that is "green information system and information technology". In other word "Green Issue" is a subject that can be applied within systems and organization using green information technology (Jenkin *et al.*, 2010).

Although sustainable consumption is known as a western term, it is embedded in Asian and pacific cultural values and traditions (UN ESCAP, 2008). Finding of studies have also consistency with this statement. Polls

conducted in china during 2007 shows that Chinese consumers are more willing to support climate changes taxes (85 percent in favor) and buy products from environmentally responsible companies (67 percent), comparing with other nationalities. In addition more than two third of other Asian countries such as Philippines , Indonesia and Korea, support climate change taxes in case it helps to solve climate problems. This environmental support is more higher comparing with 21 other countries that were under this survey (UN ESCAP, 2008). Present study is a further attempt for confirming the importance of environmental behavior in another Asian country and within Malaysians. Indeed students as a future consumers were investigated in order to capture their understanding from factor engaging environmental behavior (reduce, reuse and recycling).

2. Literature Review

2.1 Emotion and Cognition

Emotional decision making of consumers and their behavioral consequences have considered more essential from last two decades. If previously the utilitarian features of products and rational decision of consumers were taken in to account by market, now the approach has changed to analyzing and recognizing the impact of emotional influence on consumers' attitude and purchasing behavior. Hence studies have done a complete review from all discussions and divergent approaches and introduce a convergent hierarchical model for emotion (Laros and Steenkamp, 2005).

Laros and Steenkamp (2005) investigated the dimensions of emotion and discuss about its components namely *content* and *structure*. Structure refers to the way that components of emotion have been structured which can be hierarchical or in the same level. Content refers to the way that emotion has been addressed such as positive/negative, pleasure/arousal. Emotion dimensions are defined as positive emotion (contentment, happiness, love and pride) and negative emotions (anger, fear, sadness and shame).

Many studies have confirmed on the impact of emotion (Carrus *et al,* 2008; Mosquera and Sánchez, 2010) and cognition(Clare D'Souza *et al,*2006) on attitude. In addition studies have investigated the impact of emotion and cognition on green behaviors (reduce, reuse and recycle) (Meneses, 2010). Indeed some studies findings shows more weight for emotion impact on consumers green behavior (Lee, 2009), while other studies stated more explanatory power for cognition (Chan *et al.,* 2006). This means that consumers have respond more positively to *"substantive claims"* which are more factual, verifiable and well explained. Of course the impact of emotion and cognition is highly dependent to consumers' level of involvement on the action. Hansen (2005) stated that low involvement actions needs more peripheral information processing, hence it is emotional laden while when consumers are highly involved on an action, the central processing which is cognitive base is more effective.

To conclude, emotion and cognition impact on consumers' attitude toward pro-environmental behavior is undeniable, and their encouraging impacts are highly dependent to consumers' involvement toward that specific green behavior. Hence present study hypothesized that:

H1: Environmental emotion would positively relate to consumers attitude in practicing green.

H2: Environmental cognition would positively relate to consumers attitude in practicing green.

2.2 Attitude and Green Behavior (Reduce, Reuse and Recycle)

Attitude is defined as an evaluating object (Ajzen, 2001; Ajzen and Fishbein, 2000). The value expectancy model as the origin of two attitudinal theories (theory of reasoned auctioned and theory of planned behavior) stated that attitude toward an object can be verified by focusing on subjective values of object characteristics as well as belief that exists about the object. In other word attitude toward a phenomena can be measured by characteristics of phenomena and beliefs that exists about that. Attitude toward a behavior is "a person's general feeling of favorableness or unfavorableness for that behavior" (Ajzen and Fishbein, 2000). Studies have explained the moderation impact of motivation, ability, experience, prior knowledge and exposure on the relationship between attitude and behavior (Haugtvedt and The Consumer Psychology Seminar, 1997).

The relationship between attitude and behavior is approved in different contexts. Indeed many studies have used theories of TRA & TPB (Ajzen 1991) for confirming this relationship in environmental context (Han 2010; Ramayah *et al,* 2010; Hansla *et al.,* 2008; Carrus *et al.,* 2008; Tonglet *et al.,* 2004). Barr (2004) defines a framework of environmental behavior using theory of reasoned action as the foundation. Many studies have focused on consumers reducing, reusing and recycling behaviors (Woolridge *et al.,* 2006; Arslana and Cosgun 2008; Kelly *et al.,* 2006). Indeed consumers green behaviors are investigated with focusing on the impact of demographic characteristics (Swami, Snelgar, Furnham 2010); or communicational tools (such as newsletter, personalized letter) (Mee and Clewes, 2004). In addition studies have also investigated the impact of

governmental policies on practicing green behavior (Tsiliyannis, 2006). Based on what mentioned present study has hypothesized:

H3: Attitude would positively relate to consumers pro-environmental behaviors. (*H3.A: attitude would positively relate to "intention to reduce waste" as a pro-environmental behavior; H3.B: attitude would positively relate to "intention to reuse waste" as a pro-environmental behavior. H3.C: attitude would positively relate to" intention to recycle" as pro-environmental behavior.*)
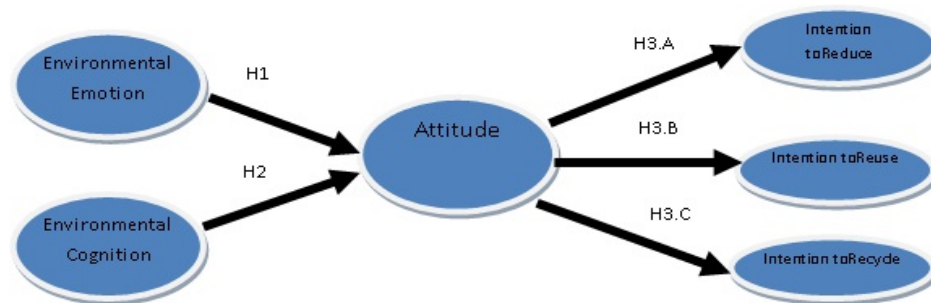

Figure 1. The research framework

3. Method

Present study was conducted among public and private universities students in Malaysia using a questionnaire. The reason to use university students as the sample is due to its homogeneity (Peterson, 2001) as well as its applicability in many environmental studies (Milfont and Duckitt 2010; Duerden and Witt 2010; Ramayah *et al.,* 2012). The non probability sampling technique was used since a sampling frame was not available. A total of 315 usable responses employed to gather data. The questionnaire consists of six sections to ask about all study variables. A 6-point "Liker" scale were used to measure responses from 1 representing strongly disagree and 6 representing strongly agree. The demographic questions were gathered in the final section of the questionnaire. The model was tested using structural equation modeling technique (SEM) (AMOS version 16).

4. Results

Demographic findings show that from 315 number of sample, 56.5% are female and 43.5% are male. Most of the respondents were from UKM university, following by UPM, MMU and UM. In addition postgraduates from these universities were including the majority of respondents.

Table 1. Profile of respondents

Demographic Characteristics	N	Percent (%)
Gender		
i. Male	137	43.5
ii. Female	178	56.6
Highest Level of Education		
i. Postgraduate Degree	152	483
ii. Bachelor Degree	121	38.4
iii. Diploma	35	11.1
iv. Secondary School	7	2.2
Occupation		
i. Student	160	56.5
ii. Employed	151	47.9
iii. Self-Employed	1	0.3
iv. Others	3	1.0
Ethnicity		
i. Malay	310	98.4
ii. Non-Malaysians	5	1.6

Respondents University		
i. UKM	89	28.3
ii. UPM	21	6.7
iii. MMU	6	1.9
iv. UM	5	1.6
v. Others	193	61.2

4.1 The Measurement Model

Table 2 represents internal reliability and convergent validity for constructs. The factor loading exceeded the recommended level of 0.6 (Chin *et al.,* 1997) as well as composite reliability which exceed the recommended level of 0.7 (Gefen *et al.,* 2000). The average variance extracted (AVE), were in the range between 0.644 and 0.938, which also exceed the recommended level of 0.5 (Hair *et al.,* 2010). Next, discriminant validity is examined using correlations between constructs and square root of the variance extracted for a construct (Fornell and Larcker, 1981).

Table 2. Convergent validity

Constructs	Item Loading	AVE	CR
Environmental Emotion			
I feel that I fulfill the green task correctly	0.81		
I feel that I am prepared to practice green concepts in my house	0.88	0.644	0.900
I feel confident about how to practice green concepts	0.84		
I feel that one could practice green concepts continuously in my area	0.72		
I do my best when I practice green concepts	0.75		
Environmental Cognition			
I am well informed about ecological issues affecting the planet earth.	0.84		
I am informed about the most important issues that affect environment.	0.84		
I understand well enough what is being said about the deterioration of nature	0.83	0.665	0.922
I know what the main ecological problems are	0.83		
In general, I know how not to damage the ecosystem	0.80		
In general, I know what is good and what is bad for the environment	0.76		
Attitude			
Green practice is good	0.91		
Green practice is useful	0.91		
Green practice is rewarding	0.86	0.775	0.945
Green practice is sensible	0.81		
Green practice is responsible	0.90		
Reduce			
I am willing to reduce usage of paper, water, electricity and plastic bags whenever possible.	0.85		
I plan to reduce usage of paper, water, electricity and plastic bags whenever possible.	0.91	0.784	0.916
I will make an effort to reduce of reduce of paper, water, electricity and plastic bags whenever possible.	0.89		
Reuse			
I am willing to reuse a product/thing whenever possible.	0.86		
I plan to reuse a product/thing whenever possible.	0.93	0.816	0.930
I will make an effort to reuse a product/thing if it can be reused	0.92		
Recycle			
I am willing to involve in recycling activities	0.85		
I plan to recycle products/ things accordingly	0.91	0.938	0.938
I will make an effort to recycle products/things.	0.89		

The results indicated that the correlation for each construct was less than the square root of the AVE indicators measuring that construct. This indicates that the measurement model has adequate discriminant validity (see Table 3). To conclude measurement model presents satisfactory reliability, convergent validity, and discriminant validity. In addition the comparative fit index (CFI) was 0.912 which is greater than the 0.9 cut-off value

(Bagozzi and Yi, 1988). In addition (GFI) was 0.90 and (AGFI) was 0.862 which exceeded 0.8 as suggested by Chau and Hu (2001). The (RMSEA) was 0.074 which was lower than 0.08 as suggested by Browne and Cudeck (1993).

Table 3. Discriminant validity for constructs

	(1)	(2)	(3)	(4)	(5)	(6)
1.Reuse	**0.904**					
2.Environmental Emotion	0.455	**0.803**				
3.Environmental Cognition	0.505	0.530	**0.816**			
4.Attitude	0.612	0.454	0.425	**0.881**		
5.Reduce	0.798	0.507	0.421	0.629	**0.885**	
6.Recycling	0.771	0.654	0.545	0.620	0.719	**0.913**

4.2 The Structural Model

The R^2 value for the relationship between the independent variables and green behavior components were 0.49 for reduce, 0.50 reuse and 0.61 for recycling respectively. Indeed this indicates 49 %, 50 % and 61 % of the variances in reduce, reuse and recycling behavior can be explained by independent variables.

Findings of the present study shows that environmental emotion is positively related to attitude (β =0.58, p< ***0.01) and environmental cognition is positively related to attitude (β =0.11, p< *0.05). In addition attitude is positively related to practicing reduce (β =0.42, p< ***0.01) as well as reuse (β =0.40, p< ***0.01) and recycling (β =0. 26, p< ***0.01). To conclude findings indicate support of all suggested hypotheses.

Table 4. Summary of the structural model

Path	Descriptions	Hypothesis	Path coefficient	t-value	Results
EE-A	Environmental Emotion-Attitude	H1	0.58	8.516	Supported
EC-A	Environmental Cognition- Attitude	H2	0.11	1.842	Supported
A-Rdu	Attitude-Reduce	H3.A	0.42	6.511	Supported
A-Rus	Attitude-Reuse	H3.B	0.40	6.390	Supported
A-Rcyc	Attitude-Recycle	H3.C	0.26	4.657	Supported

5. Conclusion

Findings of the present study indicated that emotion and cognition are positively related to attitude which has consistency with previous studies findings (Carrus *et al.,* 2008; Mosquera and Sánchez 2010; D'Souza *et al.,* 2006). Hence emotion and cognition are variables that contribute to practicing green behavior (reduce, reuse and recycling).

Attitude found as a significant predictor of practicing green behavior in an educational context. This means that educated consumers willingness and attitude toward practicing green are noticeable. Although students' willingness toward practicing green is considerable, there is no sufficient infrastructure for performing such a pro-environmental behavior in their universities as well as in society. Hence it is necessary that Malaysian universities as well as government encourage and invest on green efforts in order perform green behavior properly. In other word this research suggests educational environment as one of the key starting places to initiate green behavior within public society. The green behavior can be practiced by encouraging reducing waste as well as provision of special bins for items that can be recycled. Universities can disseminate a green practicing culture directly to their students and indirectly through society with their students encouraging behaviors toward practicing green. The sample in this study consisted only of university students; hence future studies can be expanded to Malaysian citizens in order to capture more information of pro-environmental behaviors among Malaysians.

Acknowledgements

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