Ecological Consciousness and Ecological Buying Behavior: An Empirical Study in Saudi Arabia

Abdel Mohsen Nassani [a], Jameel Ahmad Khader [b], Mitwali Abd-el Moemen[b] and Imran Ali [c]

[a]College of Business Administration, King Saud University, Riyadh Saudi Araiba
[b]Arriyadh Community College, King Saud University, Riyadh Saudi Araiba.
[c]COMSATS Institute of Information Technology Lahore, Pakistan.
E-mail: imranalinim@gmail.com

Abstract: Current study aims at investigating the ecological consciousness among Saudi consumers and the influence of ecological consciousness among Saudi consumers' ecological buying behavior. The study proposed and tested a conceptual model of consumer ecological consciousness behavior and ecological buying behavior. This study also examines the willingness to pay more among consumers' for ecological products. The study found higher level of ecological consciousness behavior among Saudi consumers. The study also found significant influence of ecological consciousness behavior on consumers' ecological buying behavior having higher willingness to pay more for ecological products.

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Introduction

The world is moving towards highly technological advancements at un-imaginable pace. The main objective of these technological advancements is to bring efficiency in the processes and add more comfort to human life. However, in pursuits of these technological advancements, the environmental degradation problems are also increasing at alarming rate. The mass production and consumption pattern of human beings around the world is making human life more vulnerable to natural disasters as seen in recent years. The main environmental hazards are emission of carbon dioxide (CO2) from auto mobiles, deforestation, massive production and mass urbanization. Researchers, environmental associations, human rights organizations, media and other members of the society are raising their voice to adopt ecologically consciousness behavior in all walks of life. Consumer being a powerful player in the marketplace can also play an important role adopting ecologically conscious behavior in their consumption behavior to cause minimum harm to environment and society. That's why the numbers of products with ecological friendly labels are increasing in the marketplace day by day. Plenty of researchers have advocated consumer's ecological conscious behavior and ecological consumption pattern helpful for ensuring sustainable environment. The concern towards depleting ecological conditions is also increasing among consumers. Klein (1990) and Dagnoli (1991) states that around 60% to 90% consumers are concerned about environmental impact of their consumption in United States.

This requires widespread concern for ecological conscious behavior across the globe. Many researchers have examined the ecological conscious level and ecological buying behavior in different countries. However, there is lack of research on ecological consciousness consumer behavior in the context of Saudi Arabia. This study fills this gap by examining the ecological consciousness behavior and its influence of ecological buying behavior among Saudi consumers. It will also examine the wiliness of Saudi consumers to pay more for ecological products. The assessment of ecological consciousness behavior is very critical for developing a culture of environment friendly behavior in the country. Therefore, this study is very significant for promotion of ecological behavior in the context of Saudi Arabia.

1. Literature Review

Ecological Conscious Behavior

Ecological consciousness refers to the specific behavior of consumer towards environment friendly products. This behavior reflects in consumers` purchase decision and willingness to pay a more for ecological products (Laroche et al., 2001). Ecological behavior can be promoted by making consumer understand that they can save money by the reducing consumption of energy and water and other products that cause greater harms to the environment. It can also be promoted among consumers through psychological factors such as to make consumers feel that ecological buying the right way to behave. Two groups of ecological consumers can be developed on these bases: one who adopt ecological behavior by decrease in consumption due to higher prices of ecological

products, and second who are willing to pay more price for ecological products. Anghel et al. (2011) suggested that consumers prefer those companies dedicated towards social issues, and are also providing quality products to consumers. The concept of claiming environment friendly by corporations and providing inferior quality products is known as 'green wash' in marketing.

Ecological Buying Behavior

Consumers are interested in environment issues more than ever before. Demographically, studies show that consumer awareness on environmental concern is the core of ecological behaviour. According to Laroche et al. (2001) examined consumer behaviour towards ecological products. Diamantopoulus et al. (2003) state that young consumers tend to possess higher environmental knowledge compared to older consumers. However, researchers found no significant relationship between the number of children and the construct of environmental knowledge, attitude and behaviour (Diamantopoulus et al., 2003). Although Grunert (1991) claims that there is a strong tendency for larger families in exhibiting positive attitude towards environment knowledge in comparison to the smaller ones.

The relationship between ecological consciousness and willingness to pay a higher price for a green product is supported by Kotchen and Moore (2008) and Yesawich (2007). A survey conducted in India and Vietnam shows similar findings stating that consumer are willing to pay 10% more for products that are environmentally friendly (Browman, 2007). This shows that environmental behaviour is an attribute of environmental consciousness. According to SCB or Statistiska Centralbyrån (2009), sales of ecological food have raised from 1.9 % to 3.4 % out of all grocery sales in Sweden in 2004 and 2008. SBC findings show that 55% of the Swedish population prefer ecological food, which affect the sales of ecological product in comparison to conventional products. Davies et al. (1995) identified three main reasons why consumers buy ecological food: the taste, the nature concern and because it is healthy. However, availability of green products and price are often factors why consumers prefer not to buy ecological products (Jamilah et al., 2010; Yiridoe et al., 2005). Kotler et. al. (2005) stated that consumers' lifestyle change over their lifetime for example for food and clothes as they are getting older. Kotler et al. (2005) listed some major factors that influence consumers' lifestyle: influence of friends, family, community and fashion, personal beliefs and preferences, economic situation and also financial status. In a market driven society, business operators tend to change consumer lifestyle by adding the integrated marketing communication strategy to influence the consumers' preferences and intentions. According to Blackwell et al. (2001) this was done through coupon or discount, personal promotion, gift and other special offers. Blackwell et al. (2001) say that usually customers will experience two feelings: satisfaction and dissatisfaction. This is where after sales services plays a major role. Consumers often have high self-esteem and are given mandate after consumption of any green product, whether to recycle or dispose the products without feeling guilty that they might harm the environment (Blackwell et al., 2001). Non-profit organizations play a special role in consumers` education. They develop partnerships with companies, and this partnership between non-profit organizations and socially responsible organizations is valuable tool in promoting social causes. Despite gaining profit organizations will be able to make a significant contribution in reducing the problems of society, encouraging the adoption of a more responsible behaviour and at the same time maintaining social involvement (Serban, 2011).

Ecological Buying Behavior and Willingness to pay More

Some people maintain that environmentally friendly products are expensive. This affects consumers' willingness to pay a higher price for environmentally friendly products. Aryal et al. (2009) highlight in a case study from Kathmandu Valley, that respondents are willing to pay premium price, but the level of acceptance varies considerably due to the availability of information, higher prices compared to conventional foods and erratic domestic supply. On the Malaysian market, the study of willingness of the consumer to pay for environmentally certified wood product shows that only 38% of respondents would be willing to pay a premium price for environmentally certified wood (Mohammad and Ibrahim, 2007). Meanwhile, Veisten (2002) has reported that consumers in Britain and Norway are willing to pay a premium price higher with 2 % of the normal price for wood products, while in the USA, they were willing to pay between 4.4 to 18.7% more depending on the value of the wood (Ozanne and Vlosky, 1997). The conceptual model presented in Figure I explains the direct influence of ecological consciousness behavior on consumer's ecological buying behavior. It also explains the moderating influence of willingness to pay higher price by consumers on the relationship of ecological conscious behavior and ecological buying behavior.

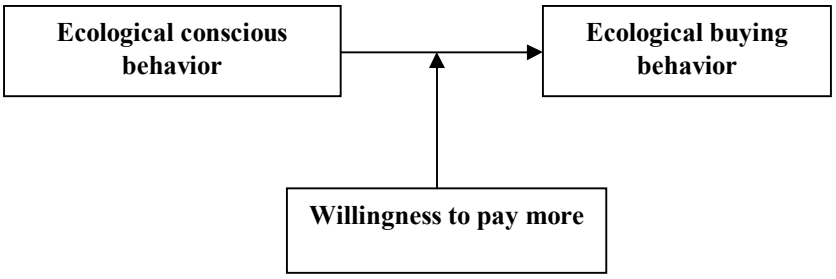

Figure I: Conceptual Model

Research Propositions

The following propositions can be constructed on the basis of above theoretical discussion.

Proposition1: Consumer having more ecological consciousness behavior exhibits higher ecological buying behavior.

Proposition 2: Consumer willingness to pay higher prices for ecological products moderates the relationship between ecological conscious behavior and ecological buying behavior.

2. Research Design

Sample

This study empirically examines the influence of ecological consciousness behavior on consumer's ecological buying behavior and the moderating role of willingness to pay more on this relationship. The empirical examination is conducted through structured survey questionnaires filled by university students in Saudi Arabia. The rationale behind selection of university students as consumers is that, they also make purchase decisions in their daily life. University students are also aware of environmental issues and participate actively in environmental protection activities. The students of various demographic profiles were selected for data collection purposes to generalize the findings of this study. A total of 300 questionnaires were filled by students out of which 287 were found complete in all respects.

Measures

The independent variable in this study is consumer ecological consciousness behavior. The instrument to measure ecological consciousness is adopted form Stanley et al. (1996) as used by Said et al. (2003). The instrument consists of 10 items, measured on 5 point Likert scale (1 for strongly agree and 5 for strongly agree). The instrument is related to ecological behavior of consumer including visiting parks, planting trees, participation in environment protection activities and seminars and collection of information towards environment. The dependent variable is consumer's ecological buying behavior, measured on 5 point Likert scale (1 for strongly agree and 5 for strongly agree). The instrument is adopted from Tilikidou (2007), the instrument consist of 7 items measuring intention of consumer to purchase ecological products. The moderating variable, willingness to pay more is also measured on 5 point Likert scale. The instrument is taken from Laroche et al. (2001), it consist of 3 items measured on 5 point Likert scale (1 for strongly agree and 5 for strongly agree).

Procedure

The data analysis procedure used in this study includes validity and reliability testing through factor loading and Cronbach alpha using AMOS and SPSS respectively. The correlation analysis and Structural Equation Model (SEM) techniques are also used to examine the relationship between variables and test hypotheses. The moderation of willingness to pay more is also analyzed through AMOS. The results are discussed in detail and statistical inferences are also explained to scientifically prove the arguments presented in this research.

3. Results and Discussions

Validity and Reliability Analysis

The mode fitness results of Confirmatory Factory Analysis shows good results in this research. The model obtained good fitness indices (CMIN = 12.54, DF = 3.57, CMIN/DF = 3.51) as Wheaton et al. (1977) holds that this ratio should be 5 or less. Hair et al. (2003) proposed that the values of NFI, CFI and GFI should be close to 1 to show good model fit. Browne and Cudeck (1993) hold that RMSEA can also used to examine model fitness and the RMSEA value must be less than 1 to prove good model fitness, and the value of RMSEA is 0.90 in this study which depicts good model fitness.

The validity analysis is conducted through Confirmatory Factor Analysis (CFA) to examine the

suitability of measurement instrument through factor loading. The standard criteria to examine the suitability of any item are that value of factor loading should be (≥ .40). Table I shows that all 10 items of ecological consciousness scale scored factor loading values higher than 0.40, therefore, the scale scored valid results. Similarly, items belonging to consumer ecological buying behavior scale also scored factor loading values well above than 0.40.

Table I: Factor Loading and Reliability Testing

Construct	Factor Loading	Cronbach Alpha
Ecological Conscious Behavior		
I visit parks/zoo etc.	0.92	
I go fishing/collecting specimen of flora or fauna	0.87	
I plant trees, vegetables or do gardening	0.59	
I go on camping/hiking/picnicking,	0.67	
I am member of environmental clubs or organizations	0.76	
I participate in environmental activities organized by environmental clubs	0.72	0.76
I attend environmental seminars/exhibitions	0.64	
I read environmental articles in news papers	0.84	
I watch documentary movies on TV on wildlife	0.79	
I read magazines and book on environmental topics	0.74	
Ecological Buying Behavior		
I ask about environmental consequences of products before buying them.	0.65	
I try to find eco-labeled products	0.91	
I prefer to buy organic fruits and vegetables	0.83	
I prefer products in recyclable packing	0.87	0.79
I try to reduce overall consumption	0.86	
I choose environment friendly alternated of products , regardless of price	0.93	
I try to use less energy	0.76	
Willingness to Pay More		
It is acceptable to pay 10 percent more for products that are produced, processes and packed in an environmentally way.	.67	
I would accept paying 10 percent more taxes for an environmental cleanup Program	0.93	0.86
I would be willing to spend some extra 50 Riyals a week in order to buy less environmentally harmful products.	0.95	

Note: CFI = 0.95; GFI = 0.88; NFI = 0.93; CMIN = 12.54, DF = 3.57, CMIN/DF = 3.51; RMSEA = 0.90

Finally, the scale for measurement of willingness to pay also scored factor loading between 0.67 and 0.95, resulting in satisfactory validity of our all three measurement scales. The reliability analysis shows that values of Cronbach alpha are between 0.76 and 0.86 for all three variables which shows that data is reliable for such type of exploratory research (Hair et al., 1998)

Hypotheses Testing

The results of structural model equation (SEM) are provided in Table II. The results of model fitness ratios are also quite satisfactory as per criterion discussed in validity and reliability analysis. The SEM result indicates highly significant and positive influence of ecological consciousness on ecological buying behavior. The criteria to prove the significance among variables in SEM is that the value of P should be less than 0.05, the P value in depicted in Table III is 0.000 that shows highly significant relationship among these variables. The significant relationship between ecological consciousnesses and ecological buying behavior supports our proposition 1.

Table II: Regression Results

Path Estimates S.E.			Critical Ratio	P-value	Test Result
ECB > EBB	.561	.095	5.883	.000	Supported

Note: CFI = 1.09; GFI = 0.98; NFI = 0.88; CMIN = 15.21, DF = 4.05, CMIN/DF = 3.75; RMSEA = 1.17

Moderation Analysis

The moderating role of willingness to pay more on the relationship between consumer ecological consciousness and ecological behaviors is also analyzed in this study through AMOS software. Table IV provides the results of moderation analysis. The criterion for moderation to be proved on particular variables is that the results of various groups under investigation should be dissimilar. Three groups of consumer's willingness to pay more for ecological products have been created i.e. low, medium and high willingness to more for ecological products. The table IV also reports insignificant influence of willingness to pay more among consumers having low willingness to pay more for ecological products ($\beta = 0.175$ and p-value = 0.437). However, significant values are found for the case of consumers having medium and high willingness to pay more for ecological products ($\beta = 0.124$ and p-value = 0.019) and ($\beta = 0.318$ and p-value = 0.041). Thus moderation of willingness to pay more for ecological products has been proved, leaving our proposition 2 accepted. The results show that investors having higher level of wiliness to pay more have higher inclinations towards ecological products as compared to consumers' having low willingness to pay more. The results of model fit shown in the footnote of Table III also show good statistical indices as criteria discussed validity and reliability analysis.

Table III: Moderation analysis of Willingness to pay more

Path	Low		Medium		High	
	Estimates	P	Estimates	P	Estimates	P
ECB --> EBB	.175	.437	.124	.019	.0318	.041

Note: CFI = 0.92; GFI = 0.86; NFI = 0.89; CMIN = 11.78, DF = 3.39, CMIN/DF = 3.47; RMSEA = 0.78

Conclusions

The findings of this study are important for environmental protection agencies, business organizations who intend to gain favorable consumer behavior and researchers in the field of ecology and consumer behavior. The main finding of this study depicts that Saudi consumers are having higher level of ecological consciousness reflected in their ecological buying behavior. They are also willing to pay more for environmentally friendly products to reduce harms of their consumption behavior on the environment and society.

The study also presents some limitations of this research. The data is collected from university students. Although students also make purchase decisions in their daily life yet it is difficult to generalize the findings of this study to ordinary consumers. Therefore, this study recommends examining the ecological consciousness behavior and buying of ecological products among ordinary consumers through larger sample size from some prominent markets of Saudi Arabia.

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