

Case Study:

Ecologically Conscious Consumer and Consumption Behavior: The Lebanese Context

Nouri Beyrouti*, Abdul-Nasser El-Kassar and Tamara Jarrar

Lebanese American University, Beirut, LEBANON

*nbeyruti@lau.edu.lb

Abstract

Environmental concerns and involvement in environmental matters became more noticeable during the 2000's. Academicians and researchers have been investigating and determining factors and criteria that characterize the ecologically conscious consumers. Today, business entities and organizations are not only responsible for maintaining effective wastes' disposal to reduce pollution, they rather became further involved in developing, manufacturing and marketing new products that are based on the utilization of eco-friendly alternatives, starting from the composition and blueprint of the package, reaching the product itself. There are significant challenges associated with examining the topic (ECCCB); our primary objective is to address these challenges. As a context for our study, we have chosen the survey method to collect data using a self-administered questionnaire, a sample of 250 students from four major Lebanese universities.

The sample is from a diverse socioeconomic group of young people and represents a relatively unexplored, yet extremely important, consumer market segment. A key finding showed that social influence was a predictor of Lebanon students' green purchasing behavior and consumption followed by environmental concern, environmental protection and perceived environmental responsibility.

Keywords: Consumer behaviour, environmental concern, Lebanon.

Introduction

Environmental concerns have been growing and intensifying year after another, passing through numerous stages until today. Rising in the early 1960's, environmental worries evolve in terms of pollution and natural resources and energy preservation until it reached its optimum with environmental matters becoming a need and a must for individuals to sustain their society's development and for businesses to maintain their competitive advantages in the market place. The individual's awareness of and involvement in environmental matters became gradually more noticeable during the 2000's. This progression and development of environmental responsibility have increased the public pressure on businesses' manufacturing,

marketing and overall performance.

Today, business entities and organizations are not only responsible for maintaining effective wastes' disposal to reduce pollution, they rather became further involved in developing, manufacturing and marketing new innovative products that are based on the utilization of eco-friendly alternatives, starting from the composition and blueprint of the package, reaching the product itself. To meet up with the increasing environmental awareness and the changes in the consumers' demands, companies have become highly concerned with modifying their products and services in relation with the rising environmental movements.

Academicians and researchers have investigated and determined several factors and criteria that characterize the ecologically conscious consumers. The academic examination and exploration of environmental concerns and "green" matters have been reflected in the development of research on the public's environmental sensitivity, or if it can be said otherwise, environmental elasticity. Roberts¹³ argued that during the later 1990's, as a result of the public "green" pressure, companies were obliged to become more environmentally responsible to survive in the market.

Lebanon, a Middle-eastern, developing country, similarly to most countries worldwide and intensively in the region, is facing remarkable threats and challenges in maintaining sustainable development in the society and economy. Environmental responsibility became a must for overcoming related problems and consequences to maintain sustainability for future generations and significant quality life as the failure in rising above those concerns would yield socio-economic disasters³⁸.

The objective of this paper is to examine environmental awareness of eco-friendly products among Lebanese consumers and to explore the ecologically consumer conscious consumption behavior among Lebanese people. Preceding studies on environmental concerns have investigated numerous variables and determinants which stimulate and influence the consumption behavior of individuals toward a more environmental friendly product and ecologically responsible business practices.

Review of Literature

Many researchers have investigated the consumption behavior of ecologically conscious consumers in many countries, mostly developed countries which have weighted to this topic considerable importance, earlier than

developing nations did. Accordingly, limited studies are available on developing countries in this field. Furthermore, most preceding research has been focused on the determinants and factors affecting the ecologically conscious consumers, in addition to their characteristics and purchasing behavior. The bulk and greater part of such studies have concluded that the following are among the major determinants for measuring the ecological consciousness: (1) demographic factors (2) behavioral environmental commitment measures (3) psychometric ecological consciousness measures (example Samdahl et al¹⁵; Zimmer et al²⁰; Schultz et al¹⁷; Bradley et al³). Other researchers have added more deliberate investigation through considering green behavior psychographic determinants (example Stern et al¹⁸; Bohlen et al²; Roberts¹³; Diamantopoulos et al⁵; Frej et al⁹).

Ecological consumption behavior involves selecting and purchasing products, or taking considerable actions that contribute to the protection of the nature, resources and environment⁹. According to Diamantopoulos et al⁵, consumers who are aware of environmental concerns are more likely to maintain ecologically conscious consumption behavior. The attitude and behavior of an individual is related to and based on numerous factors and variables which makes understanding the individual's characteristics and environmental awareness indispensable and vital for comprehending and recognizing the behavior towards ecological and green products⁸.

A significant figure of previous researchers has placed considerable effort in recognizing the demographic factors which show a relationship (correlation) with ecologically conscious consumer behaviors. Among those demographic variables, those that show significant correlation do furnish the ground for marketers to maintain effective market segmentation and targeting through taking advantage of the "green" and eco-friendly consumption behaviors or even consumption attitudes.

According to the United Nations¹⁹, the youth and the youngsters are highly responsible for maintaining ecological friendly consumer behavior in order to ensure the long-term environmental sustainability. Numerous studies on the green consumer behavior and eco-friendly marketing have investigated the age as a major demographic determinant for the ecological consumer behavior.^{1,3,8,10,13,15,17,20}

The young generation is more responsive to environmental concerns and ecological products. General environmental theories argue with this common belief. Considering the literature and previous research on this topic, the findings and results related to demographic factors, can be termed as somehow ambiguous and vague. Some researchers have found non-significant correlation between the age of the individual and his/her ecologically conscious consumption attitude or behavior^{10,14,18}. Further studies which

investigated the correlation between age and green consumer awareness, behavior and ecological understanding, did conclude that there exists a significant negative correlation^{1,8,20}.

However, numerous studies have concluded that there is a significant, yet positive correlation, justifying the results through illustrating the overall social, environmental and charitable performance and activities of the individuals at their middle age^{3,13,15,17}. Gender is a major demographic variable to be included in determining correlations, especially after the increase of the role of women socially, economically, environmentally and politically as a major change agent.

According to Eagly⁶, women are more likely to be environmentally aware, responsive and sensitive to ecological concerns than men, hence they play a major significant role on maintaining green awareness, attitudes, developments and behaviors. Most researchers, who investigated similar topics, did consider correlating gender as a major demographic variable that influences the green consumer behavior and attitude^{1,3,8,10,11,13-15,17,18,20}. Similarly to the findings of correlations between age and green behavior, the findings on correlations between gender and ecological consumption attitude/behavior cannot be considered decisive or definite as different researches have concluded different results and findings. This correlation has been found significant in some studies^{3,8,15}. Other research studies^{13-15,18,20} have found results that support the theory of Eagly⁶. Yet, numerous researchers have found insignificant correlation^{10,11}.

As a common belief, there exists a positive correlation between the income of an individual and his/her ecological conscious consumption behavior which means that as the individuals enjoys a higher income, he/she become more capable of accepting and paying the increase in costs engaged in green products in order to sustain the environmental development.

Many researchers have investigated the income as an interpreter for the ECCCB or any similar environmental-related framework^{1,10,13,15,20}. Furthermore, an interesting study by Newell et al¹² has revealed that income is not only correlated to the environmental consumption behavior, it does also moderate the impact of other variables or determinants (such as the gender of the individual) on the green consumption behavior and environmental awareness. Nonetheless, other researchers have found that there exists a non-significant correlation between the income of an individual and his/her ecological consumption behavior/attitude¹³ to provide further illustration for the latter finding, the researcher related this finding to the environmental "revolutions" that have occurred in the 90's which led to environmental awareness¹.

On the other hand, other researchers have uncovered that

there exists a positive correlation between income and ecological behaviors^{10,11,14,20}. Surprisingly, a small number of studies have revealed that there exists a significant, but negative, correlation between income and ecological attitude/behavior^{13,15}. The educational level of individuals has been investigated as a determinant for ecological consumption behavior/attitude by many researchers^{1,10-13,15}. Unlike the case of age and gender, the findings for education can be considered steady and similar among the numerous studies involved, yet still an ultimate agreement on the type and direction of the correlation could not be determined.

Researchers have determined that there is a significant positive correlation between education and environmental behavior^{1,11,13,20}. However and surprisingly, Samdahl et al¹⁵ have found that there exists a significant negative correlation between the two variables, while Newell et al¹² and Frej et al⁹ have found that there is no significant correlation between the variables. According to Doetr⁴, environmental education has to be of high importance in governmental agendas in order to maintain environmental sustainability as “education and students are considered a very positive change agent or force”.

The level of knowledge in environmental concerns does have direct effect on the consumption practices of individuals. As maintained by Bohlen et al² education plays a very significant role in creating awareness and leading people to adopt and commit to ecological responsible consumer behavior. The perceived consumer effectiveness (PCE) is the attitude, conviction, confidence or belief that the individual’s reaction, position or approach to ecological concerns is a result of the individual’s belief that he/she can have direct positive impact and influence on the results of those concerns.

Accordingly, the consumer believes that his/her attitude towards green products is effective and influential as their involvement in environmental development is important and significant. Accordingly, many researchers have aimed at correlating the PCE with the ecological conscious consumer behavior^{9,13}. The results of all the above studies have been similar and definite as they all found that there exists a positive relationship between the PCE on one hand and the ECCB on the other. Lately, Roberts¹³ found that this was the single strongest predictor of ECCB, surpassing all other demographic and psychographic correlates examined. Numerous researchers have examined the type of relationship between the environmental concern and the ECCB. Most research have found a significant positive correlation^{13,15}.

Hypotheses

According to Sekaran²⁶, “hypotheses are logically conjectured relationship between two or more variables expressed in the form of testable statements”. The hypotheses to be tested in our paper are following:

H1: There is a significant correlation between the ECCCB and all demographic variables.

H2: There is a significant correlation between the ECCCB and the Perceived Consumer Effectiveness.

H3: There is a significant correlation between the ECCCB and the Environmental Concern.

Methodology

The objective of this paper is to investigate the determinants affecting the ecological consumer behavior of Lebanese young consumers and to determine the research methodology to be used in the research. As defined by Clarke²⁸, a research stands for “going beyond personal experience, thoughts, feelings and opinions that do not refer to other sources of information and a research is applied to develop an idea, analyze an issue, solve a problem, or to make an argument.” And, a research is a study which is carried out by interested individuals for the purpose of uncovering new relationships between different variables, adding to the existing knowledge and accordingly finding out noteworthy data in a “systematic” way which increases the knowledge of the researcher and is of significant benefit to the concerned field of study.

Saunders et al³¹ reveal that researches differ, yet multi-stage processes are involved, no matter what the research type or nature is (stages involve choosing the topic, maintaining a literature review, reach designing, data collection, data analysis and finally concluding and providing recommendations). The paper is made up of the previously addressed stages by Saunders et al³¹ in order to maintain a well-developed study and satisfy the research purpose. As defined by Sekaran³⁶, a research methodology is “an academia’s established regulatory data collection and evaluation framework in order to reach and validate new knowledge”. This research is of quantitative nature. As defined by Burns et al²⁴, a quantitative research is a formal, objective, purposeful, systematic and logical process which involves describing and investigating correlations and the nature of relationships between variables (independent variables and dependent variables).

Most previous studies which attempted to uncover correlations related to this topic, did utilize the survey tool, more specifically the questionnaire^{1,5,8-10,12,13,15,18,20-23}. Different types of research methods have been explored and identified by researchers. Saunders et al³¹ have differentiated between four major research methods:

(1) Experiments which are mostly suitable for scientific studies as they are beneficial for scientific purposes and generate effective scientific findings³¹.

(2) Observations which include several stages: systematic observation, recording, justification, investigation and explanation of the behavior of individual³¹.

(3) Analysis of Secondary data, where secondary data can be defined as the data that has been previously collected for other reason or function. Analysis of secondary data is one of the easiest methods to access, quantify and reduce time and costs³¹, however it won't be suitable for this study as the Lebanese market lacks reliable secondary statistical data in this field and no previous research has been made to address the green consumption behavior of Lebanese consumers, hence the existing data is very limited and if found, is unreliable or unofficial.

(4) Survey methodology, which is the most popular research method followed by most studies and researches in the business field and is very vital in answering "who, what, where, how much and how many questions"³¹. Surveys are popular for numerous reasons, as they allow the researcher to target a large sample through collecting larger amount of data; they are time-efficient and cost-efficient.

Saunders et al³¹ have similarly argues with the popularity of the questionnaires revealing that they "can be applied to larger sample sizes, are cheaper and quicker and easy to quantify", however major disadvantages exist in the lower quality of data. The survey is usually used to collect data for the purpose of illustrating and investigating a large population. Johnson³² argues that choosing a suitable research method is directly related to the success of the paper. Creswell²⁵ argues that the selection of a research methodology is an importantly considerable choice considering that it contributes to reaching the research objectives and aims.

The research method choice in this study is the survey questionnaire. As the objective of this paper is to undergo an investigation on environmental awareness and consumption of eco-friendly products among Lebanese consumers, hence this study involves exploring the ecologically conscious consumption behavior among a sample of Lebanese consumers, through a questionnaire. Clarke²⁸ argues that correlations can be uncovered through analytical quantitative questionnaires which help determine links and relations among variables as it helps to define the link between different given variables. The objective of the study is to uncover the determinants for the green consumption behavior among Lebanese consumers, which requires uncovering correlations and relationships. Cohen et al³³ argue that the questionnaire has to be designed in order to "gather data at a particular point in time with the intention of describing the nature of existing conditions".

As defined by Saunders et al³¹, the questionnaire is a set of questions given to a sample of people. The questionnaire here is made up of 9-item scale, chosen after a pilot test applied to the questionnaire made up of 30-item scale used by Roberts¹³. The measuring scale is the Likert scale ranging from (1) which stands for "Never True" to (5) which stands for "Always True".

The demographic measures used in the study of Robert¹³ were used exactly here (Age, Gender, Income, educational level). The only variable that was eliminated from the demographic variables is the "occupation" for two reasons; the first is the targeted population in this study and the sample chosen is university students, so considering the nature of the sample, the occupation was found to be unbeneficial. The second reason which supported the first is that the occupation was found insignificant with respect to the ECCCCB in the study of Roberts¹³. Taking into consideration the psychographic measures, the two variables that were replicated from the study of Roberts (1996) were the PCE and EC (Perceived Consumer Effectiveness and Environmental Concern). Those two psychographic measures have seen the highest significance in the original study and also in numerous studies^{3,13,15,18}.

According to Fraj et al⁹, it is one of the most vital steps in the research development to specify the targeted population which is the Lebanese population in this case. Burns et al²⁴ defined the population as a set including numerous individuals, objects and experiences handling similar criteria. The questionnaire in this paper is directed to a convenience sample of 250 students at four major universities in Lebanon (Lebanese American University, American University of Beirut, Lebanese University and Beirut Arab University). The questionnaires were distributed in the universities' major campuses (LAU-Beirut, AUB-Beirut, BAU-Beirut and LU-Hadath). The respondents were given the time they needed to fulfill all items in the questionnaire. The collected data from the survey was classified, coded and analyzed through the Statistical Package for the Social Sciences (SPSS). The statistical constructs to be used here are the frequency analysis, cross-tabulations and correlation analysis.

Findings and Analysis

Environmental deprivation has primarily led to the development of global warming problem, let aside pollution concerns in addition to acid rain and deforestation. It was not until 1992 that environmental issues have been publicly and globally dealt by the United Nations Environmental Conference in Brazil³⁹, with the anticipation of the significant effect of consumption patterns resulting from economic growth on environmental distress globally. Chukwuma³⁴ argues that public awareness, followed by governmental regulations, is the most significant factor affecting environmental issues. Similarly, Ramsey et al³⁶ have highlighted the importance of public awareness and their engaged readiness to bear the cost of minimizing the adverse impacts of environmental problems.

According to Salequzzman et al³⁷, environmental education does have its direct influence on creating environmental awareness and recognition which stimulates the generation of environmentally responsible consumption behavior. This field is still evolving; many questions are still unanswered.

Researching in environmental issues remains very interesting, especially when addressing developing countries with further focus on the educated population through university students.

The data collected have been maintained from a random sample of 250 students from four major Lebanese universities. The total number of distributed questionnaires was 300, yet the returned ones which were found valid to be used were 250. Table 2 shows the sample characteristics, in terms of measurable demographic variables (gender, age, educational background and household annual income). The gender distribution of the 250 person in the sample is: Male 67.2%, Female 32.8%. The age distribution of the 250 person is: 17-19 (19.2%), 20-22 (38.8%), 23-25 (26.4%), 26 and above (15.6%).

The education distribution of the 250 person is: Freshman (10%), Undergraduate (58%), Graduate (25.6%), Doctorate (6.4%). The household income of the 250 person is: Under \$5,000 (10%), \$5,000 - \$9,999 (11.6%), \$10,000 - \$14,999 (15.6%), \$15,000 - \$19,999 (8.8%), \$20,000 - \$24,999 (5.6%), \$25,000 - \$29,999 (4%), \$30,000 - \$39,999 (10.8%), \$40,000 - \$49,999 (6.8%), \$50,000 - \$59,999 (5.2%), \$60,000 - \$79,999 (10%), \$80,000 or more (25.6%).

Reliability and Validity tests

The Cronbach's alpha is usually the most used measure for uncovering the internal consistency of variables. According to Kress³⁰ at least a value of 0.7 is needed to indicate the internal consistency. In order to assess the significance and reliability of this study, reliability tests have been designed based on the Cronbach's α . Accordingly, tables 3, 4 and 5 reveal that the measurable variables and items are reliable (Cronbach's α greater than or equal to 0.7). Furthermore, the correlation matrix has been used to assess the correlation between the items used to measure each variable. Tables reveal that variable are inter-correlated, none has had a negative value, thus there is no multi-collinearity (because there is no high correlation) and the items used are very useful and adequate for measuring the variables⁷.

In order to analyze the data collected, two measures have been taken into consideration. The first analysis tool involved basic correlations in order to assess the correlations between variables and to be able to compare the results of this paper to previous findings in terms of the significance and direction of the correlations. Accordingly, the correlation of the factors under study with the ECCB has been maintained. The second analysis tool utilized the multiple regressions which are beneficial in order to determine a profile of the Lebanese ecological consumer. Those two analysis models have been chosen following the study of Roberts¹³ who utilized those two methods to interpret the results. In the multiple regressions, the ECCB has been used as the dependent variable, while the

demographic and psychographic factors were used as the independent variables. The following tables reveal three multiple regressions where table 3 includes the demographic variables, table 4 the psychographic variables while the table 5 included both types of variables. This analysis tool illustrated in the tables provides a useful method for addressing the significance of the two types of variables under study.

Table 2 represents the correlation Matrix between the ECCB Ecologically Conscious Consumer Behavior and the demographic and psychographic variables. The table reveals that among the four demographic variables, three were found to have significant correlation with the ECCB. Those three variables are the age, gender and education. Furthermore, considering the psychographic variables, both the Environmental Concern and the Perceived Consumer Effectiveness were found to be significantly correlated with ECCB. Accordingly, the first research hypothesis is rejected because not all the demographic variables were found to have significant correlation with ECCB (income was the only variable which did not reflect a significant correlation with ECCB).

The second research hypothesis is accepted and there is a significant correlation between ECCB and Perceived Consumer Effectiveness. Similarly, the third research hypothesis is accepted and there exists a significant correlation between the environmental concern and ECCB.

The findings of this study with respect to the correlation between age and ECCB are consistent with the findings of Samdahl et al¹⁵, Schulitz et al¹⁷, Roberts¹³ and Bradley et al³ who also found a significant positive correlation between age and ECCB. With respect to the gender, the results of this study are consistent with those of Fishbein et al⁸; Samdahl et al¹⁵; Bradley et al³ who also found a significant correlation between gender and ECCB, yet they are inconsistent with the study of Roberts¹³. As for the income, the findings here were inconsistent with those of Roberts¹³, as this study revealed that the income of Lebanese consumers is not correlated to their ECCB. Considering education, the study results are consistent with the majority of other studies^{1,11,13,20}, as it has been revealed that the education of the Lebanese consumer is a major determinant for his/her ECCB.

With respect to the psychographic measures, the findings of this study were very consistent with the findings of previous researchers and primarily Roberts¹³ and the perceived consumer effectiveness of the Lebanese consumer was found to have very positive significant impact on the ECCB. Similarly, with respect to the second psychographic variable, the findings here were consistent with those of Schulitz et al¹⁷ and Roberts¹³ who revealed a positive significant correlation. Furthermore, three regression analyses were maintained.

Table 1
Cronbach's Alpha 0.824

	ECCB1	ECCB2	ECCB3	ECCB4	ECCB5	ECCB6	ECCB7	ECCB8	ECCB9
ECCB1	1.00	.781**	.629**	.645**	.696**	.786**	.691**	.821**	.761**
ECCB2		1.000	.823**	.875**	.693**	.829**	.599**	.642**	.657**
ECCB3			1.000	.437**	.591**	.601**	.486**	.681**	.759**
ECCB4				1.000	0.831**	.754**	.629**	.729**	.499**
ECCB5					1.000	.683*	.532**	.689*	.567**
ECCB6						1.000	.685**	.541**	.479**
ECCB7							1.000	.455**	.391**
ECCB8								1.000	.738**

	EC1	EC2	EC3	EC4	EC5
EC1	1.00	.672**	.549**	.736**	.749**
EC2		1.000	.836**	.795**	.698**
EC3			1.000	.565**	.639**
EC4				1.000	0.814**
EC5					1.000

Table 2
Correlation Matrix of Green Consumer Profile Factors

	ECCB*	Age	Gender	Income	Education	PCE**	EC***
ECCB*	1.00						
Age	0.169b	1.0					
Gender	0.178b	-0.051	1.0				
Income	-0.113	-0.189a	0.095	1.0			
Education	-0.176b	0.291a	0.052	-0.093	1.0		
PCE**	0.574a	0.006	0.328a	-0.273	-0.031	1.0	
EC***	0.341a	0.029	0.317a	-0.095	-0.314	0.417a	1.0

*Ecologically Consumer Behavior; ** Perceived Consumer Effectiveness; *** Environmental Concern; a p less than 0.01; b p less than 0.05

Table 3
Regression of ECCB on demographic variables

Factor	Regression Coefficient	Significance
Constant	71.873	< 0.001
Age	1.478	0.039
Gender	6.013	0.035
Income	-0.532	0.400
Education	-7.412	0.002

R²=0.088, F=4.967, p=0.001

Table 4
Regression of ECCB on psychographic variables

Variable	Regression Coefficient	Significance
Constant	24.986	0.032
EC	0.437	0.023
PCE	3.915	< 0.001
R ² =0.0412, F=33.409 P less than 0.001		

Table 3 reveals that three among the four demographic variables have significant impact on the ECCB (age, sex and education) p < 0.05, while income is the only demographic variable which does not reveal significant

impact. Furthermore, the first regression model, which includes the demographic variables only, has $R^2=0.088$. As for the second regression model in table 4, the psychographic variables are considered alone. The table reveals that both psychographic variables considered in this study are significant (environmental concern and perceived consumer effectiveness, $p < 0.05$). The third regression analysis in table 5, age, gender, education and environmental concern along with perceived consumer effectiveness has sustained their significance with $p < 0.05$).

Conclusion

This study has maintained a survey among a sample of 250 Lebanese students, based on a questionnaire developed by Roberts¹³ and in an attempt to replicate his study in the Lebanese context. The study aimed at investigating the determinants of the Ecologically Conscious Consumer Behavior among Lebanese University Students. The findings of this paper can be considered highly consistent with those of Roberts¹³. To start with the first conclusion, psychographics have larger influence on the Lebanese green consumer behavior than demographic variables, knowing that among four measured demographic variables, three were found significant, yet among two measured psychographic variables, both were found significant.

Accordingly, among demographic variables, age, gender and educational level are effective in interpreting the ECCB of Lebanese university students. Furthermore, it can be also concluded that the Lebanese student’s awareness of environmental problems and acknowledgement of his/her role in confronting environmental dilemmas and limiting their influence on the surrounding, are very influential determinants and drivers of their ECCB.

Accordingly, both psychographic variables are found to have significant correlation and considerable impact on ECCB. The first limitation in this study is the nature of the topic which is based on cross-sectional dimensions and items. The second limitation is the lack of secondary data and previous research regarding this topic in the Lebanese context. Furthermore, the utilization of a questionnaire which is self-reported limits the potential of the study and its generalization capability. Based on the findings of the

study, the following recommendations are provided:

Considering the significance of demographic variables age, gender and educational level and psychographic variables EC and PCE, it is essential for researchers and marketing managers to utilize both measures in profiling and segmenting the Lebanese green consumers. Accordingly, a mixed measurable model which involves psychographic and demographic determinants is recommended.

Considering the high significance of the psychographic variables, the marketing approaches targeting Lebanese green consumers, have to be more linked to the correlated beneficial outcome, knowing that Lebanese university students have showed to be highly influenced by how this green product would benefit the environment, as they appear to be highly responsible, concerned and aware of their capabilities in fighting environmental problems.

Considering the impact of educational level on ECCB, universities have to increase their role in providing the environmental awareness and developing the students’ knowledge about environmental problems and how to overcome them. Furthermore, workshops and orientations can be maintained to introduce the green products to Lebanese consumers and make them more aware of their important role in protecting the environment. Enhancing the environmental education is a need and a must. Environmental Concerns have to be highlighted on the agendas of companies, universities, NGOs and governments. Local Lebanese companies have to meet the increasing Lebanese consumers’ awareness and commitment to protecting the environment. The Lebanese government has to consider developing initiatives to enhance the environmental awareness and commitment in the country in addition to supporting companies to produce green products.

References

1. Anderson W. T. Jr and Cunningham W. H., The socially conscious consumer, *Journal of Marketing*, **36**, 24-35 (1972)
2. Bohlen G., Schlegelmilch B. and Diamantopoulos A., Measuring ecological concern: a multi-construct perspective, *Journal of Marketing Management*, **9**, 417-32 (1993)

Table 5
Regression of ECCB on both demographic and psychographic variables

Variable	Regression Coefficient	Significance
Constant	34.745	0.041
Age	1.326	0.001
Gender	2.321	0.412
Income	0.145	0.821
Education	6.102	0.007
EC	0.406	0.028
PCE	4.125	< 0.001

$R^2=0.521$, $F=20.324$, p less than 0.001

3. Bradley J. C., Waliczek T. M. and Zajicek J., Relationship between environmental knowledge and environmental attitude of high school students, *Journal of Environmental Knowledge*, **30(30)**, 15-23 (1999)
4. Department of the Environment, Transport and Regions, "Opportunities for Change", a Consultation Paper on a Revised UK Strategy for Sustainable Development, DOETR, London, **22** (1998)
5. Diamantopoulos A., Schlegelmilch B. B., Sinkovics R. R. and Bohlen G. M., Can socio-demographic still play a role in profiling green consumer, *Journal of Business Research*, **56**, 463-82 (2003)
6. Eagly A. H., Sex Differences in Social Behavior: A Social-role Interpretation, Lawrence Erlbaum Associates, Hillsdale, NJ (1987)
7. Field A., Discovering Statistics using SPSS for Windows, London, New Delhi, Thousand Oaks Sage publications (2000)
8. Fishbein M. and Ajzen I., Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research, Addison-Wesley, Reading, MA (1975)
9. Fraj E. and Martinez E., Environmental values and lifestyles as determining factors of ecological consumer behavior: an empirical analysis, *Journal of Consumer Marketing*, **23(3)**, 131-47 (2006)
10. Leonard-Barton D., Voluntarily simplicity lifestyles and energy consumption, *Journal of Consumer Behavior*, **8**, 239-54 (1981)
11. McEvoy J., III. The American concern with the environment, Social Behavior, Natural Resources and the Environment (1972)
12. Newell S. J. and Green C. L., Racial differences in consumer environmental concern, *The Journal of Consumer Affairs*, **31(1)**, 52-72 (1997)
13. Roberts J. A., Green consumers in the 1990s: profile and implications for advertising, *Journal of Business Research*, **36(3)**, 215-35 (1996)
14. Roper Organization, The Environment: Public Attitudes and Individual Behavior, Commissioned by Johnson S. C. and Son Inc (1990)
15. Samdahl D. M. and Robertson R., Social determinants of environmental concern: specification and test of the model, *Environment and Behavior*, **21(1)**, 56-85 (1989)
16. Schwartz J. and Miller T., The earth's best friends, *American Demographics*, **13**, 19-40 (1991)
17. Schulitz P. W. and Oskamp S., Effort as a moderator of the attitude behavior relationship: general environmental concern and recycling, *Sociology Psychology Quarterly*, **59(4)**, 368-89 (1996)
18. Stern P. C., Dietz T. and Kalof L., Value orientations, gender and environmental concern, *Environment and Behavior*, **25(4)**, 317-50 (1993)
19. United Nations, Promoting education, public awareness of training, Report of the UK Conference on Environment and Development, Retrieved December 26, 2011 from gopher.undp.org/700/uncnfs/UNCED/English/a2_36 (1992)
20. Zimmer M. R., Stafford T. F. and Stafford M. R., Green issues: dimensions of environmental concern, *Journal of Business Research*, **30(1)**, 61-76 (1994)
21. Wade J. A., Greening the hospitality curriculum, *Journal of Hospitality and Tourism Education*, **9(2)**, 19-21 (1997)
22. Tai S. H. C. and Tam J. L. M., A lifestyle analysis of female consumers in Greater China, *Psychology & Marketing*, **14(3)**, 286-310 (1997)
23. Ottman J. A., Stafford E. R. and Hartman C. L., Avoiding green marketing myopia: ways to improve consumer appeal for environmentally preferable products, *Environment*, **48(5)**, 23-37 (2006)
24. Burns N. and Grove S., The practice of research: conduct, critique and utilization, 2nd ed., Saunders W. B., Philadelphia, Pennsylvania, USA (1993)
25. Creswell J. W., Educational research: Planning, conducting and evaluating quantitative and qualitative research, 2nd ed., Pearson, Upper Saddle River, NJ (2005)
26. Sekaran U., Research methods for business, 4th ed., John Wiley & Sons, Hoboken, NJ (2003)
27. Polit D. and Hungler B., Essentials of nursing research: methods, appraisal and utilization, 4th ed., Lippincott J. B., Company, Philadelphia, Pennsylvania, USA (1997)
28. Clarke R. J., Research Models and Methodologies, HDR Seminar Series, Faculty of Commerce, Retrieved on 20, December, 2011 from www.uow.edu.au/content/groups/public/web/.../uow012042.pdf (2005)
29. Kevin Punch F., Developing effective research proposals, Sage, Thousand Oaks (2000)
30. Kress G., Marketing Research, 3rd edition, Prentice Hall, Englewood Cliffs (1998)
31. Saunders M., Thornhill A. and Lewis P., Research Methods for Business Students, Financial Times Press, Retrieved on 28, December 2011 from <http://vig.pearsoned.co.uk/catalog/academic/product/0,1144,0273701487-IS,00.html> (2007)
32. Johnson J. M., Criteria for assessing interpretive validity in qualitative research, In Denzin N. K. and Lincoln Y. S., Eds., Handbook of Qualitative Research, Thousand Oaks, CA: Sage Publications, 480-490 (1994)
33. Cohen J. D., Romero R. D., Farah M. J. and Servan-Schreiber D., Mechanisms of spatial attention: the relation of macrostructure to microstructure in parietal neglect, *Journal of Cognitive Neuroscience*, **6**, 377 (1994)
34. Chukwuma C. S., Environmental issues and our chemical world – the need for a multidimensional approach in

environmental safety, health and management, *Environmental Management and Health*, **9(3)**, 136-43 (1998)

35 Roberts J. A. and Bacon D. R., Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior, *Journal of Business Research*, **40(1)**, 79-89 (1997)

36. Ramsey C. E. and Rickson R. E., Environmental knowledge and attitudes, *Journal of Environmental Education*, **8**, 10-18 (2006)

37. Salequzzman M. D. and Stocker L., The context and prospects for environmental education and environmental career in

Bangladesh, *International Journal of Sustainability in Higher Education*, **2(2)**, 104-21 (2001)

38. Tikka P. M., Kuitunen M. T. and Tynys S. M., Effect of educational background on students' attitude, activity levels and knowledge concerning environment, *The Journal of Environmental Education*, **31(3)**, 12-19 (2000)

39. United Nations Environment Program (UNEP), Global Environment Outlook 2000, UNEP, Nairobi (1999).

(Received 17th January 2014, accepted 12th February 2014)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.