

# **The Effect of Environmental Attitudes on Environmentally Conscious Behavior of University Students**

Nesener Altinigne <sup>a\*</sup> F. Zeynep Bilgin <sup>b</sup>

<sup>a</sup>*Research Assistant, Istanbul Bilgi University, Istanbul, 34440, Turkey*

<sup>b</sup>*Professor of Marketing, Lecturer at Johannes Kepler University, Austria*

---

## **Abstract**

The main aim of the study is to determine how environmental attitudes affect environmentally conscious behavior of university students. A questionnaire was distributed at two universities in Istanbul and results indicate that environmental attitudes have significant effect on environmentally conscious behavior, reflecting that students with positive environmental attitude generate more positive intention to act in an environmentally conscious way and behave in accordance with this intention.

*Keywords:* Environmental attitude, eperception of pollution, environmental intention, environmentally conscious behavior.

---

---

\*NesenerAltinigne. Tel.: +90-212-311-5503  
nesener.altinigne@bilgi.edu.tr

## **1. Introduction**

The environment has been a topic of global interest and the perspective towards environmental issues has changed considerably in recent decades. The growing concern about environmental problems has its roots in facts such as the production and consumption of unhealthy products, the use of unhealthy packages for food products threatening health of people, the pollution caused by environmental waste, global warming resulting in drought and climatic changes in the globe and tropical deforestation all threatening life on earth and its sustainability. The implications of environmental problems are multifold, affecting countries without boundaries in a global system of interdependencies. Today it is not just governments that focus on a healthier environment. A deeper look at this issue reveals that there are further reasons pushing marketers to create an environmental concern: the opportunities or the competitive advantages, cost and profit issues, competitive pressures and corporate social responsibilities (Upadhyaya & Shukla, 2011). At the core of all these movements is consumerism, the movement that came to force when people in different parts of the world and to different times started to feel that the products and the environment they are exposed to harm them in the long run. They hence became the active citizens with an environmentally conscious mindset, attitudes and behavior. It is main their initiative that enforces the manufacturers to take action, stop unhealthy production, save energies, be involved in waste management and work on eliminating the environmental problems. Thus, the aim of the study is to gain an insight towards environmentally conscious behavior. This study has three objectives; measuring the relationship between attitude toward environmentally conscious living and intention to act in an environmentally friendly way, analysing the relationship between perception of pollution and intention to act in an environmentally friendly way, and analysing the relationship between intentions to act in an environmentally friendly way and environmentally conscious behaviour.

### *1.1.Environmentally Conscious Behavior*

Environmentally conscious behavior refers to acting in a way that helps to protect environment such as buying and consuming products with minimum negative impact on the earth and on the people - the so called green products – during and after their consumption, i.e. resulting in minimum waste and disposals; using energy saving appliances; and in case of waste, separating that waste for recycling (Mainieri et al., 1997). In other words, green products do not pollute and harm natural resources, they can be recycled or conserved (Richmond et al., 1993),

can be manufactured using the recycled plastics or paper, have reusable packaging, can be energy-efficient or contain biodegradable, non-polluting ingredients free of synthetics (Mostafa, 2007). Thus they point out environmental issues with their recyclability, reusability, durability, degradability or refill ability, high quality of green performance, energy saving aspects, as well as their use of recycled materials (Eco-product directory, 2008). Environmentally conscious behavior also covers today questioning the packaging material used for many products, especially the food contact material, i.e. the part of the package that is in direct contact with the foodstuff and when not carefully selected can easily result in chemical food contamination (Muncke, 2012).

### *1.2. Environmental Attitudes and Perception of Pollution*

Attitudes represent what consumers like and dislike (Blackwell et al., 2006) and constitute the basics in predicting consumers' willingness to pay for green purchases (Chyong et al., 2006), especially for environmental protection focused ones (Tanner and Kast, 2003). Environmental attitudes reflect "the collection of beliefs, affect, and behavioral intentions a person holds towards environmentally related activities, issues" (Schultz et al., 2007), or as the "psychological tendency expressed by evaluating perceptions or beliefs about natural environment, including factors affecting its quality, with some degree of favor or disfavor" (Milfont, 2007). Chyong et al. (2006), defended that attitudes are the most consistent explanatory factor in predicting consumers' willingness to pay for green products. It can be inferred that price is not the main factor that prevents consumers from purchasing green products if they are pro-environment. Also Tanner and Kast (2003) advocated that green purchases are strongly affected by positive attitude of consumers towards environmental protection. Consumers who adopt an eco-friendly attitude believe that the ecological situation on the planet is dangerous and it is a necessity taking precautions to protect the environment (Schlegelmilch et al., 1996). Although such a pro-environmental attitude includes inconveniences, additional costs and lower levels of product performance consumers having this attitude are more likely to engage in an environmentally conscious consumer behavior, such as trying to reach recyclable products, and purchasing biodegradable goods (Laroche et al., 2001). Also the research of Laroche et al., (2001) indicated that the attitude toward environmentally conscious living is an important part for understanding environmental attitude.

The literature about environmental behaviour indicates different variables. Banerjee and McKeage, (1994) found that one of the most influencing predictors is the perception of severity of environmental problems. Ecologically conscious consumers believe that current environmental conditions can endanger life on earth and they percept this situation as a serious problem, on the other hand consumers

who are less sensible to environmental issues perceive that ecological problems will resolve themselves. Perceptions were found to be significant indicators to develop an environmentally friendly behavior. Thus; hypothesis generated according to reviewed literature are presented below:

H<sub>1</sub>: A positive attitude toward environmentally conscious living has significant and positive effect on intention to act in an environmentally friendly way.

H<sub>2</sub>: Perception of pollution has significant and positive effect on intention to act in an environmentally friendly way.

H<sub>3</sub>: Environmental intention has significant and positive effect on environmentally conscious behaviour.

## **2. Methodology**

This research is a cross-sectional quantitative study that aims to analyse data with a descriptive approach. The primary data collection method was chosen to be email connections based mail interviews and self-administered face to face interviews with a convenience sample chosen among students from various disciplines of two universities in Istanbul. The data collection instrument was a questionnaire. The first part focused on measuring the environmental attitudes with 4 statements, the second part aimed to measure perception of students with 3 items, the third part includes 3 items to measure the buyers' intention to act in an environmentally friendly way, and fourth part focused on environmentally conscious behaviour with 4 statements by a 6 point likelihood interval scale (Never-Seldom-Sometimes-Often-Mostly-Always). From the 300 questionnaires distributed during the course hours for self-administered questionnaires of face to face interviews, 280 were returned. For the mail interviews, a link was built to a web site where a sample of 200 students were informed about this link to have access to the questionnaire via email and only 80 of them responded. Hence, from a total of 500 questionnaires distributed, a response rate of 72% could be reached with 360 returned. Since 40 of these questionnaires were detected to be incomplete, they were excluded from analysis.

## **3. Understanding the Effect of Environmental Attitudes, Perception of Pollution on Intention to Act in an Environmentally Friendly Way and on Environmentally Conscious Behaviour**

The demographic characteristics of the sample, the university students, reflect that they present a wide age bracket with 18 to 42 years, with the median of 23.

For the gender distribution results indicate a breakdown of 67% being female, 33% being male. The education level of respondents was searched for three levels. Accordingly, 80% are pursuing a bachelors' degree, 12% a master's degree and 8% are focusing on their PhD studies. The income level of the respondents is grouped in three categories. Nearly 45% have a monthly income of 1000 TL and below (435 Euro), followed by about 44% within 1001-2000 TL range (435 – 870 Euro), the third group constituting 11% of the sample stated to have an income above 2000 TL (above 870 Euro), the exchange rate being 1 Euro = 2.3 TL by the time of data collection.

An explanatory factor analysis is implemented as to detect the factor structure of the variables. To detect the reliability of scales, Cronbach's Alpha coefficients are computed for each variable. General criteria to evaluate Cronbach's Alpha coefficients is that when  $\alpha \leq 0.70$ , the scale is reliable (Nunnally, 1978), but in some studies coefficients  $\alpha \leq 0.60$  is also accepted as reliable (Özdamar, 1999; Santos, 1999; Akgül&Çevik, 2005).

**Table 1. Statements of the study**

Factors and Scales	Factors			
	1	2	3	4
<b>ATECL: Attitudes Towards Environmentally Conscious Living (Cronbach's <math>\alpha</math>:0.801)</b>				
<b>ATECL1</b> When I buy products, I consider how my use of them will affect the environment and other consumers	.731			
<b>ATECL2</b> I think people should prefer environmentally friendly products.	.693			
<b>ATECL5</b> using environmentally friendly products should be a life style.	.609			
<b>ATECL 4</b> I think environmental problems have direct effect on my daily life	.605			
<b>PP: Perception of Pollution (Cronbach's <math>\alpha</math>:0.709)</b>				
<b>PP2</b> I think the city in which I live is running out of places to dispose of its solid waste.		,807		
<b>PP3</b> I believe that the amount of packaging can be reduced for some consumer packaged goods.		,695		
<b>PP1</b> I think the world is facing a solid waste disposal problem.		,624		
<b>I: Intention to act in an environmentally conscious way(Cronbach's <math>\alpha</math>:0.741)</b>				
<b>I2</b> I would purchase a product in a biodegradable package before purchasing a similar product in a non-biodegradable package.			.810	
<b>I3</b> I would purchase a product in a recyclable package before purchasing a similar product in a package which is not recyclable.			.700	
<b>I1</b> I think it is acceptable to pay 10% more for groceries that are produced, processed, and packaged in an environmentally friendly way.			.504	
<b>ECB: Environmentally Conscious Behaviour (Cronbach's <math>\alpha</math>:0.808)</b>				
<b>ECB9</b> I separate garbage to recycle.				.808
<b>ECB11</b> I put my litter in recycle boxes.				.760
<b>ECB10</b> I buy environmentally friendly products even they are a little bit expensive than others.				.696

As reflected in Table 1, the “environmentally conscious behavior” ( $\alpha$ : 0.808), the “attitude towards environmentally conscious living” ( $\alpha$ : 0.801), the “intention to act in an environmentally conscious way” ( $\alpha$ : 0.741) and “perception of pollution” ( $\alpha$ : 0.709) are found to be highly reliable with levels above 0.7 as indicated by Nunnally (1978). The statements related to environmentally conscious behavior covered recycling and purchasing environmentally friendly products. Among the 10 statements for environmental attitudes 4 had covered energy saving, excessive packaging but these did not load in the factor analysis. Among the 3 statements for intention to act in an environmentally conscious way, two related to packaging and the other one was about intention to pay more for environmentally friendly products.

One objective of the study is to understand the effect of the environmental attitudes on intention to act in an environmentally friendly way. “Regression analysis” is used as a tool to understand relationship between the variables.

According to the results, a significant and positive relationship is found between attitude towards environmentally conscious living and the intention to act in an environmentally conscious behavior. The detailed explanations and tables are presented below for the results.

### *3.1. Analyzing the Relationship between Attitude toward Environmentally Conscious Living and Intention to Act in an Environmentally Friendly Way*

In the regression analysis, the relationship between attitude toward environmentally conscious living and intention to act in an environmentally friendly way is analyzed. The results display that regression model is statistically significant ( $F$ : 113.240;  $p=0.000<0.05$ ) and as it is assumed in hypothesis  $H_1$ , attitude toward environmentally conscious living significantly and positively effects intention to act in an environmentally friendly way ( $\beta=0.512$ ;  $p=0.000<0.05$ ). When attitude toward environmentally conscious living is high, intentions of students to act in an environmentally friendly way is also high. According to results, attitude toward environmentally conscious living explains the 0.260 of change in intention to act in an environmentally friendly way (Adjusted  $R^2= 0.260$ ), hence,  $H_1$  predicting that ‘the attitude toward environmentally conscious living has a significant and positive effect on intention to act in an environmentally friendly way’ is supported.

### *3.2. Analyzing the Relationship between Perception of Pollution and Intention to Act in an Environmentally Friendly Way*

In the second regression analysis, the separate effect of perception of pollution on intention to act in an environmentally friendly way is analysed. The results of analysis show that regression model is statistically significant ( $F: 41,963$ ;  $p=0,000<0,05$ ) and perception of pollution significantly and positively effects intention to act in an environmentally friendly way ( $\beta=0,341$ ;  $p=0,000<0,05$ ). It means, an increase in perception of pollution also increases intention to act in an environmentally friendly way. It is also found that perception of pollution explains the 0,114 of change in intention to act in an environmentally friendly way (Adjusted  $R^2= 0,114$ ). According to these results,  $H_2$  predicting 'perception of pollution has a significant and positive effect on intention to act in an environmentally friendly way' is supported. Students with high level of perception of pollution generates more positive intention to act in an environmentally friendly way, than those with low level of perception of pollution.

### *3.3. The Relationship between Intention to act in an Environmentally Friendly Way and Environmentally Conscious Behavior*

In this part of the study, the relationship between intention to act in an environmentally friendly way and environmentally conscious behaviour is analysed. The results of the regression analysis demonstrate that regression model is statistically significant ( $F: 23.946$ ;  $p=0.000<0.05$ ) and as it is assumed in hypothesis 3, intention to act in an environmentally friendly significantly and positively effects environmentally conscious behaviour ( $\beta=0.265$ ;  $p=0.000<0.05$ ). If intention to act in an environmentally friendly way is high, environmentally conscious behaviour way will also be high. According to results, intention to act in an environmentally friendly way explains the 0.067 of change in environmentally conscious behaviour (Adjusted  $R^2= 0.067$ ), and  $H_3$  predicting 'intention to act in an environmentally friendly way has significant and positive effect on environmentally conscious behaviour' is also supported.

Students with high intention to act in an environmentally friendly way transform their intention to the action (present environmentally conscious behaviour). The results indicate that when the severity of perception of pollution increases their intention to act in an environmentally friendly way also increases.

## **4. Conclusion**

The 21st century lets us face many new environmental problems that affect our daily lives and the balance of the nature. This study started with the belief that

even small steps can produce big changes, and with the aim to develop an understanding of how environmental attitudes affect intention to act in an environmentally friendly way and thus result in environmentally conscious behavior. The results present that students with a positive environmental attitude tend to generate more positive environmental intention and behavior than those with negative environmental attitude. People, who have positive attitudes towards environmentally conscious living and high levels of perception of pollution want to act in an environmentally friendly way, want to buy environmentally friendly products and recycle. But the core part is about the transformation of this intention to the behavior. The analysis about the relationship between the environmental intention and environmentally conscious behavior indicated that there is a positive relationship between them. Once students generate positive environmental intention, in the end it directs people to behave in an environmentally friendly way. The results of the analyses are parallel with the findings in the literature (Balderjahn, 1988;Schwepker and Cornwell, 1991).

In conclusion, further research should be conducted to understand if there are some gaps between environmental intentions and environmentally conscious behaviors. Today's world is full of infinite consumer choice. Consumers are surrounded by millions of products. Some of these products are chosen amongst their competitors for a reason. Besides, the buyers' concern about the food contact material used by the manufacturers is also an important research area. Taking environmental issues into account can be a point of differentiation for companies. Customer value is the core for today's business success and to generate competitive advantage. Companies can contribute to the solutions of environmental problems in several ways: organize social responsibility campaigns, provide sponsorship for environmental events, and use recycled or recyclable packaging; but it is more important to encourage the CEOs and responsive bodies in governments to focus on clean and healthy production with a big concern on the natures' balance as to act preventive, i.e. managing environmental issues before they become problems and before they start to threaten the human and ecological life. It seems, companies that provide products according to consumers' environmental demands will have more loyal customers than those who do not.

In terms of education, students should be informed about the environmental issues sufficiently to prevent its severe effects on their life. Plus, young generations aware of the environmental issues threat on their lives and on the globe become more concerned about how they want to shape their consumption and how they want to treat the environment. Thus, courses related to environmental issues should be added to curriculum at different levels in primary and secondary education to increase interest and the feeling of responsiveness of students. A positive attitude towards environment can be shaped in early ages by improving their environmental knowledge and to help them make their decisions in a more conscious way.



Besides the formal education, a further help is organizing educational events about environmental problems and encouraging young people to behave towards the benefits of the society. All these attempts should be seen as small steps towards a healthier world and life.

## References

- Akgül, A. & Çevik, O. (2005). *İstatistiksel Analiz Teknikleri: SPSS'te İşletme Yönetimi Uygulamaları*, Emek Ofset, Ankara.
- Balderjahn, I. (1988). Personality Variables and Environmental Attitudes as Predictors of Ecologically Responsible Consumption Patterns. *Journal of Business Research*, 17, 51-6.
- Chyong, H.T, Phang, G, Hasan, H. & Buncha, M.R. (2006). Going green: A Study of Consumers' Willingness to Pay for Green Products in Kota Kinabalu. *International Journal of Business and Society*, 7(2), 40-54.
- Forleo, G., Laroche, M. & Bergeron, J., (2001) "Targeting consumers who are willing to pay more for environmentally friendly products", *Journal of Consumer Marketing*, 18 (6), 503 – 520.
- Kilbourne, W. & Pickett, G. (2008). How materialism affects environmental beliefs, concern, and environmentally responsible behavior. *Journal of Business Research*, 61, 885-893.
- Kim, Y. & S. Choi, (2003). Antecedents of pro-environmental behaviors: An examination of cultural values, self-efficacy, and environmental attitudes. Paper presented at the annual meeting of the International Communication Association.
- Kim, Y., & Choi, S.M. (2005). Antecedents of Green Purchase Behavior: An Examination of Collectivism, Environmental Concern and PCE. *Advances in Consumer Research*, 32, 592-59.
- Kinney, T., Taylor, J. & Ahmed, S. (1974). Ecologically Concerned Consumers: Who Are They. *Journal of Marketing*, 38 (April), 20-24.
- Laroche, M., Bergeron, J., & Barbarot-Forleo, G. (2001). Targeting Consumers Who are Willing to Pay More for Environmentally Friendly Products. *Journal of Consumer Market*, 18, 503-520.
- Leonidou, L.C., Leonidou, C.N. & Kvasova, O. (2010). Antecedents and outcomes of consumer eco-friendly attitudes and behavior. *Journal of Marketing Management*, 26 (13-14), 1319-1344.
- Mainieri, T., Barnett, E. G., Valdero, T. R., Unipan, J. B., & Oskamp, S. (1997). Green Buying: The Influence of Environmental Concern on Consumer Behavior. *The Journal of Social Psychology*, 137 (2), 189-204.
- Milfont, T. L., Sibley, C. G., & Duckitt, J. (2007). Testing the moderating role of the components of norm activation on the relationship between values and environmental behavior.
- Mostafa, M.M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology & Marketing*, 24 (5), 445-473.
- Muncke, J. (2012). Food Packaging Materials. Food Packaging Forum, October 5<sup>th</sup>, 2012, from <http://www.foodpackagingforum.org/food-packaging-health/food-packaging-materials>.
- Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.

Özdemir, O., Yıldız, A., Ocaktan, E. & Sarışen, Ö. (2004). Tıp Fakültesi Öğrencilerinin Çevre Sorunları Konusundaki Farkındalık ve Duyarlılıkları. *A. Ü. Tıp Fak. Mecmuası*, 3, 117- 127.

Peattie, K., Wright, K. & Pujari, D. (1992), Green and competitive: Influences on environmental new product development performance, *Journal of Business Research*, 56 (8657–671

Richmond, D., Shamdasani, P. & Ong Chon-Lin, G. (1993). Green Consumers in an Oriental Culture: Role of Personal and Marketing Mix Factors, *Advances in Consumer Research*, 20, 488-493.

Santos, J. Reynaldo A. (1999). Cronbach's Alpha: A Tool for Assessing the Reliability of Scales, *Journal of Extension*, Tools of the Trade 37 (2), from <http://www.joe.org/joe/1999april/tt3.php>

Schlegelmilch, B.B., Bohlen, G.M. & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing*, 30 (5), 35-55.

Schultz, P. W., & Zelezny, L. (1999). Values as predictors of environmental attitudes: Evidence for consistency across 14 countries. *Journal of Environmental Psychology*, 19, 255-265.

Schultz, P.W., Nolan, J.M., Cialdini, R.B., Goldstein, N.J. & Griskevicius, V. (2007). The Constructive, Destructive, and Reconstructive Power of Social Norms. *Psychological Science*, 18 (5), 429-434.

Schweper, C.H. & Cornwell, T.B. (1991). An examination of ecologically concerned consumers and their intention to purchase ecologically packaged products. *Journal of Public Policy and Marketing*, 10 (2), 77-101.

Tan, B. C. (2011). The roles of knowledge, threat, and PCE on green purchase behavior. *International Journal of Business and Management*, 6(12), 14.

Tanner, C. & Kast, S.W. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 20 (10), 883-902.

Upadhyaya, A. & Shukla, R. (2011). Environmental Concerns and Influences on Green Consumers: An Empirical Study. *International Journal of Marketing Management* IJMM, 1 (2), 1-9, from <http://www.jmijtm.com/papers/1299092743Document7.pdf>

Worcester R. (1993). *Public and elite attitudes to environmental issues*. London: MORI.