

# Influence of Environmental Concern on Green Purchasing Behavior among Undergraduate Students in Sri Lanka

## ABSTRACT

**Aims:** The main objective of the study was to determine how the consumers' pro environmental concerns affected their green buying behavior in sports science and management undergraduate consumers. Furthermore, determining the green buying behavior of consumers and willing to pay for eco green products and awareness of the green products were also among the specific objectives of the study.

**Study design:** This research is a quantitative investigation with a cross-sectional design, involving the collection of data at a single point in time. The primary objective of the study is hypothesis testing, specifically examining the association between individuals' pro-environmental concerns and their green purchasing behavior. The researchers had limited involvement in the data collection process, which relied on a questionnaire, and the study took place in a natural, non-contrived setting. The individual students served as the units of analysis for this study.

**Place and Duration of Study:** The study's sample consisted of 140 Sports Science students from the Department of Sports Science within the Faculty of Applied Sciences at the University of Sri Jayewardenepura in Sri Lanka (n=140). Data collection occurred from June 2022 to September 2022.

**Methodology:** The observed variables of the study were pro environmental concerns, consumers' environmental concern, consumers' health concerns, consumers' economic concerns, consumer's energy saving concerns and recycling concerns along with awareness of green products. A pre-tested Likert Scale questionnaire was used to accessed information and the validity and reliability was also measured.

**Results:** The results indicate that consumers' pro-environmental concerns significantly affect their green buying behavior. The environmental concerns, health concern, economic concerns, energy saving concerns and recycling concerns positively affected the green buying behavior. Also, it was found that consumers are willing to buy green products. The survey findings disclose that consumers' awareness towards green products, high level of green buying behavior products and their pro environmental concern impacts their green buying behavior.

**Conclusion:** Consumers are willing to buy green products. The survey findings disclose that consumers' awareness towards green products, high level of green buying behavior products and their pro environmental concern impacts their green buying behavior.

*Keywords: Pro Environmental Concern, Green Buying Behavior, Consumer, Green Products*

## 1. INTRODUCTION

"The environment is one of the most vital components for mankind. The rapid economic growth in the past years have witnessed increasing consumers' consumption worldwide causing environmental deterioration through over consumption and utilize of natural resources" (Chen & Chai, 2010). As a result the ecosystem deteriorates due to excessive use and utilization of natural resources and over consumption of individuals. The consequences of environmental degradation are global warming, depletion of stratospheric ozone layer, pollution of sea and rivers, noise and light pollution, acid rain, desertification and many more. Many countries in the world including Sri Lanka are facing global catastrophes today. Deforestation has been identified as one of the most pressing environment problems of Sri Lanka. Deforestation has increased soil erosion, landslides, floods, fauna and flora degradation, and damage to human lives and properties. Soil is one of the most important materials for life on Earth's survival. Since the 1980s, Sri Lanka's environmental concerns have worsened due to significant population growth and increased number of industries.

Thibault (2009) define that “how burdens on the environment increase when a sporting event is held: people travel to participate in the event, the natural environment is destroyed by the construction of sports facilities, and the chemicals used in facility maintenance can impact the ecosystem. In other hand, playing sports could put a burden on the global environment”. Therefore, it is important to raise awareness about the impact of sports on the natural environment (Thibault 2009) while reducing negative impacts and incorporating an awareness of the global environment into the development of sporting events (Zhang et al. 2013).

Chalip (2006) suggests that sports can serve as a catalyst for raising awareness and promoting environmental conservation efforts. Given that sports possess educational value and significantly impact the development of one's character, fostering an environmentally responsible persona through sports can underscore the intrinsic worth of sporting activities. A growing concern pertains to the substantial ecological harm that sports can inflict (Inoue & Kent, 2012). For instance, major sporting events can exert significant pressure on the environment, depleting energy and resources while generating substantial food and beverage waste (Collins et al., 2022). The construction of sporting facilities, like golf courses, may also have adverse effects on surrounding vegetation and wildlife (Inoue & Kent, 2012). Consequently, it becomes imperative to gain insights into the pro-environmental behaviors of individuals in society and the factors that shape them. The repercussions of environmental damage caused by the current generation will inevitably be borne by future generations. Therefore, there is a pressing need to equip individuals with sound environmental knowledge and skills to devise sustainable solutions for mitigating environmental degradation.

Hence, the main objective of this study was to identify the awareness of undergraduates who are following the Sports Science and Management Degree Programme of University of Sri Jayewardenepura of environmental consequences, determining how the consumers pro environmental concerns affect their green buying behavior, accessing the awareness on Eco- friendly products, and to make recommendations based on the findings on their 'Green Buying Behavior'.

The key concepts that are beneficial to study are fragmented in below sub-topics.

### **1.1 Global Environment Issues**

“Global environmental issues indicate a variety of issues, including global warming, the depletion of the ozone layer, acid rain, a decrease in wild animal's populations, and other related issues” (Feder and Nishio, 1999). Pro-environmental behavior is discussed as a possible course of action that can be undertaken by private sector agents to fulfill their corporate social responsibility (CSR) as a measure of protecting the environment damaged by mankind up to a certain extend.

### **1.2 Sports and Environment**

In 1999, the International Olympic Committee designated the term 'environment' as the third pillar of Olympism, along with the “sports” and “culture” pillars, in the Olympic Movement's Agenda Twenty One (21), promoting the idea that those environmental activities can be communicated through sports. Since then, environmental concerns and issues that may arise due the event have become one of the important factors for choosing the host city (Zhang et al. 2013).

### **1.3 Pro-environment behavior**

Pro-environment behavior can be defined as the behavior that consciously seeks to minimize the negative impact of one's actions on the nature and built world.

In literature there are interrelated, interchangeable, overlapping concepts which describe the preferences or behaviors that motivate to reduce the negative impacts of consumption on environment. Sustainable consumption, responsible consumption, significant consumption (Stern 2000), conscious consumption (Ellen et al., 1991), and mindful consumption (Sheth et al., 2010) are among these concepts.

#### **1.4 Environment concern**

“Environmental concern represents a broader concept referring to a wide range of indicators such as beliefs that the environment is under threat, that there are adverse consequences to environmental degradation and general concerns of human-caused environmental problems” (Wesley, S, 2001). “Environmental concern therefore can have a significant impact on the degree to which individuals are motivated to change their behavioral practices in order to help alleviate environmental problems” (Barr, 2007).

#### **1.5 Health concern**

“Although there are various other factors of environmental issues, environmental problems such as pollution (e.g., water, air, soil) and climate change are introduced as substantial sources of public health problems through various diseases” (Schreinemachers & Ghio, 2016; Frumkin et al., 2008). “Individuals, who perceive environmental issues as a serious threat for their health, tend engage in more environmental friendly activities like recycling, water conservation and purchasing environmentally friendly products” (Baldassare & Katz, 1992). Therefore, consumers with a relatively high level of health concern are expected to have a stronger tendency for those pro-environmental behaviors.

#### **1.6 Economic concern**

Economic reasons including the financial security (Richins & Dawson, 1992), price and value consciousness of consumers, (Lastovicka et al., 1999) and economic rationality (D’Astous & Legendre, 2008) are symbolize as the dominating factors that of economic concerns that influence on decision making processes and thus play a vital role in pro-environmental decisions of consumers. “Another reflection of economic concern showed as a lifestyle characteristic reflecting sacrifice in short-term consumption as a mechanism of self-controlled purchase behavior” (Lastovicka et al., 1999; Rick et al., 2008; Pepper et al., 2009).

#### **1.7 Energy Saving**

“Probably due to the improvements in the standard of living and the greater demands by the consumers in terms of comfort, the energy consumption has significantly increased in both developed and developing countries over the years” (Paço & Varejão, 2010). “Since 1970’s, energy conservation is a topic of interest for social and environmental psychology due to raising concern about energy crisis and environmental problems such as global warming and threats to biodiversity” (Abrahamse et al., 2005).

#### **1.8 Recycling**

“As a remedy for environmental issues different types of recycling processes have been introduced by the researchers where materials previously used are collected, processed, remanufactured and reused” (McCarty & Shrum, 1994) and (Schultz et al., 1995). As a post-purchase behavior of consumers, recycling involves bringing possessions (such as newspapers, plastics, bottles and cans) to recycling collection points (Minton & Rose, 1997); (Yavetz et al., 2009), buying products made from reusable packages and combing out garbage (Roberts & Bacon, 1997).

#### **1.9 Green Buying Product Behavior**

“Green buying can be defined as purchasing and consuming products that are benign towards environment” (Mainieri et al., 1997). If a product has a low negative environmental impact, it is regarded as an eco-friendly product. (Mainieri et al., 1997) showed “eco-friendly products as ecologically safe products that can facilitate the long term goal of protecting and preserving our natural habitat”.

#### **1.10 Pro-Environment Behavior and Green Buying Behavior Relationship**

There is a dearth of literature for accessing the impact of pro-environmental behavior which may influence on green buying behavior of sports consumers. However, Numerous research studies have found a positive relationship between environmental concern and preference for environmental attributes (Bang et al., 2000; Fujii, 2006) and behaviors such as recycling (Straughan & Roberts, 1999), willingness to pay more for renewable energy (Bang et al., 2000), engagement in environmentally friendly consumer behavior (Mostafa, 2007) or green purchase behavior (Xiao & Dunlap, 2013).

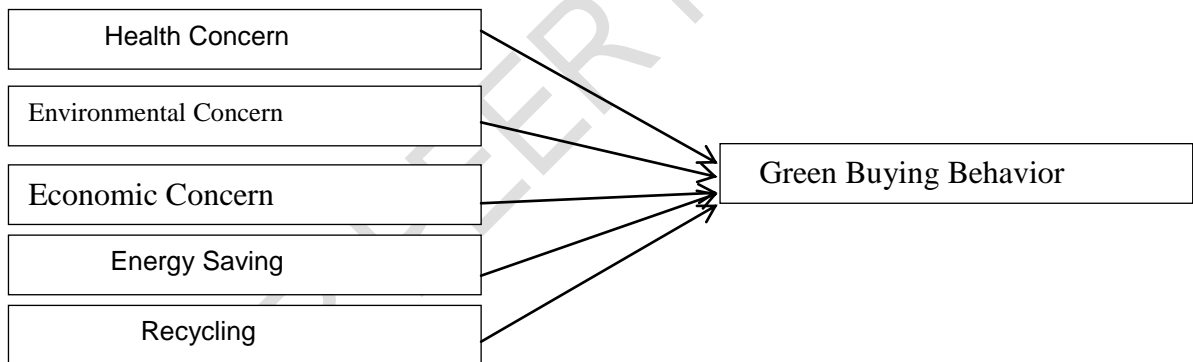
## 2. MATERIAL AND METHODS

The purpose of this quantitative study was hypothesis testing and the researcher's interference for the study was minimal. The study was conducted in a non-contrived environment and the time horizon was cross-sectional.

The participants of the study completed a pilot tested questionnaire which was validated as reliable via Cronbach's Alpha values, reported over and above 0.7. The sample for this study was one hundred and forty (n=140) where the sampling technique was purposive sampling.

The conceptual framework developed to the study is as follows.

Figure 1: Conceptual framework of the study



Source: Author Developed

## 3. RESULTS AND DISCUSSION

Method used to analyze data was regression analysis. Regression analysis is a set of statistical methods used for the estimation of relationship between a dependent variable and one or more independent variables.

The demographics of the sample of 140 respondents were analyzed and out of it 58 (41.4%) were male and 82 (58.6%) were female respondents. Most of the respondents were from suburb area (37.9%) and 30.7% were from rural areas. Most of the respondents were reported from the age category of 22-25 years (85.7%) whereas most of them were athletes (35%). Many of the respondents were unemployed (77.9%).

### 3.1 Relationship between Pro Environmental Concern Factors and Green Buying

The below tale depicts the relationship between factors affecting on pro-environmental behavior and green buying behavior.

Results should be clearly described in a concise manner. Results for different parameters should be described under subheadings or in separate paragraph. Table or figure numbers should be mentioned in parentheses for better understanding.

The discussion should not repeat the results, but provide detailed interpretation of data. This should interpret the significance of the findings of the work. Citations should be given in support of the findings. The results and discussion part can also be described as separate, if appropriate.

Table 1: Relationship between Pro Environmental Concern Factors and Green Buying Behavior(GBB)

| Model                       | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. | Collinearity Statistics |       |
|-----------------------------|-----------------------------|------------|---------------------------|-------|------|-------------------------|-------|
|                             | B                           | Std. Error | Beta                      |       |      | Tolerance               | VIF   |
| (Constant)                  | 1.245                       | .181       |                           | 6.888 | .000 |                         |       |
| Recycling (RC)              | .155                        | .037       | .287                      | 4.160 | .000 | .646                    | 1.549 |
| Environmental Concerns(ENC) | .206                        | .043       | .336                      | 4.741 | .000 | .611                    | 1.636 |
| Health Concerns (HC)        | .222                        | .055       | .283                      | 4.040 | .000 | .626                    | 1.597 |
| Economic Concerns (EC)      | .004                        | .035       | .008                      | .118  | .907 | .714                    | 1.401 |
| Energy Savings (ES)         | .028                        | .042       | .048                      | .671  | .504 | .610                    | 1.639 |

a. Dependent Variable: Green Buying Behavior (GBB)

The equation is,  $GBB = 1.245 + 0.1550(RC) + 0.206(ENC) + 0.222(HC) + 0.004(EC) + 0.028(ES)$

The p-value other than Economic concerns and Energy savings is less than 0.001. Thus, Recycling (RC), Environmental Concerns (ENC) and health concerns are significant predictors of GBB. As per results, Economic Concerns (EC) and Energy Savings (ES) are not significant predictors of GBB. The VIF values are below 5 indicating that there is no Multicollinearity.

### 3.2 The degree of Green Buying Behavior (GBB)

One sample t-test was carried out to measure the inference about population mean, and to access whether it is more than 3.5.

Table 2: One-Sample Statistics for Green Buying Behavior (GBB)

|  | N | Mean | Std. Deviation | Std. Error Mean |
|--|---|------|----------------|-----------------|
|  |   |      |                |                 |

|                             |     |        |        |        |
|-----------------------------|-----|--------|--------|--------|
| Green Buying Behavior (GBB) | 140 | 3.5388 | .32233 | .02724 |
|-----------------------------|-----|--------|--------|--------|

The sample mean for 140 subjects is  $3.53 \pm 0.322$ . The standard error reported is 0.02724.

Table 3: Green Buying Behavior (GBB) of One-Sample Test

|                             | Test Value = 3.5 |     |                 |                 |   |       |
|-----------------------------|------------------|-----|-----------------|-----------------|---|-------|
|                             | T                | Df  | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |       |
|                             |                  |     |                 |                 | Lower                                     | Upper |
| Green Buying Behavior (GBB) | 1.425            | 139 | .157            | .03881          | -.0151                                    | .0927 |

The *P*-value is more than 0.05. Thus the mean GBB is 3.5. We are 95% confident that mean GBB of the population is between 3.349 and 3.5927.

#### 4. CONCLUSION

The main aim of this research was to investigate whether the elements of pro environmental concern influencing green buying behavior. The results indicated that Recycling (RC), Environmental Concerns (ENC) and health concerns are significant predictors of GBB whereas Economic Concerns (EC) and Energy Savings (ES) are not significant predictors of GBB. Environmental concern has a link with one's education level (Liere & Dunlap, 1980); age (Liere & Dunlap, 1980), knowledge (Stern & Dietz, 1994), values (Schultz & Zelezny, 1998), personal norms and perception about personal responsibility. It was found that the environmental concerns may affect the green buying behavior of consumers (Stern & Dietz, 1994).

The present study found that health concerns positively affect green product buying behavior. Health as an individual variable has also been revealed as an indicator of buying green products (Joshi & Rahman, 2015). The study results indicated that recycling behavior is positively affected the green buying behavior undergraduates.

It is much noted that the educational level plays a significant role in influencing consumers to practice green buying behavior. Green Buying behavior could be promoted by strengthening the education system and with the support of the media. This was well proven by the behaviors exhibited people by when Meethotamulla garbage mound was collapsed on 14th of April 2017. Consumers started reusing the polythene bags, using alternative bags instead of polythene, garbage segmentation and reducing the use of plastic elements and many more to avoid and sooth the environmental damages that could occur due to garbage dumping.

Provision of related education to change the attitudes of the consumers, strict policy development and implementation and development of a proper legal structure to punish the law violators also can be

used a tools to promote green buying behavior. Future research needs to be carried out to in those areas to screen more factors which could influence on GBB.

## REFERENCES

- Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology*, 25(3), 273–291. <https://doi.org/10.1016/j.jenvp.2005.08.002>
- Baldassare, M., & Katz, C. (1992). The Personal Threat of Environmental Problems as Predictor of Environmental Practices. *Environment and Behavior*, 24(5), 602–616. <https://doi.org/10.1177/0013916592245002>
- Bang, H.K., Ellinger, A.E., Hadjimarcou, J., Traichal, P.A., 2000. Consumers concern, knowledge, belief, and attitude toward renewable energy: an application of the reasoned action theory. *Psychol. Mark.* 7 (6), 449–468
- Barr, A. (2003). Trust and Expected Trustworthiness: Experimental Evidence From Zimbabwean Villages. *The Economic Journal*, 113(489), 614–630. <https://doi.org/10.1111/1468-0297.t01-1-00150>
- Barr, D. B., Caudill, S. P., Jones, R. L., Pfeiffer, C. M., Pirkle, J. L., Wilder, L. C., & Needham, L. L. (2005). Urinary Creatinine: Barr et al. Respond. *Environmental Health Perspectives*, 113(7). <https://doi.org/10.1289/ehp.113-1257673>
- Barr, S. (2007). Factors Influencing Environmental Attitudes and Behaviors. *Environment and Behavior*, 39(4), 435–473. <https://doi.org/10.1177/0013916505283421>
- Chalip, L. (2006) Towards Social Leverage of Sport Events, *Journal of Sport & Tourism*, 11:2, 109-127, DOI: 10.1080/14775080601155126
- Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering*, 4(2), 27-39. <http://dx.doi.org/10.3968/j.mse.1913035X20100402.002>
- Collin, T., Cunningham, R., Deb, M., Villa, R., MacAdam, J. & Jefferson, B. (2022) Energy potential of household fats, oils and grease waste. *Water and Environment Journal*, 36( 1), 132–141. Available from: <https://doi.org/10.1111/wej.12744>
- D'Astous, A., & Legendre, A. (2008). Understanding Consumers' Ethical Justifications: A Scale for Appraising Consumers' Reasons for Not Behaving Ethically. *Journal of Business Ethics*, 87(2), 255–268. <https://doi.org/10.1007/s10551-008-9883-0>
- Ellen, P. S., Wiener, J. L., & Cobb-Walgren, C. (1991). The Role of Perceived Consumer Effectiveness in Motivating Environmentally Conscious Behaviors. *Journal of Public Policy & Marketing*, 10(2), 102–117. <https://doi.org/10.1177/074391569101000206>
- Feder, G., & Nishio, A. (1998). The benefits of land registration and titling: Economic and social perspectives. *Land Use Policy*, 15, 25-43.

- Frumkin, H., Hess, J., Luber, G., Malilay, J., & McGeehin, M. (2008). Climate Change: The Public Health Response. *American Journal of Public Health*, 98(3), 435– 445. <https://doi.org/10.2105/ajph.2007.119362>
- Fujii, S. (2006). Environmental concern, attitude toward frugality, and ease of behavior as determinants of pro-environmental behavior intentions. *Journal of Environmental Psychology*, 26(4), 262–268. <https://doi.org/10.1016/j.jenvp.2006.09.003>
- Inoue, Y., & Kent, A. (2012). Sport teams as promoters of pro-environmental behavior: an empirical study. *Journal of Sport Management*, 26, 417-432.
- Joshi, Y., & Rahman, Z. (2015). Factors Affecting Green Purchase Behaviour and Future Research Directions. *International Strategic Management Review*, 3(1– 2), 128–143. <https://doi.org/10.1016/j.ism.2015.04.001>
- Laroche, M., Bergeron, J., & Barbaro, F. G. (2001a). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520. <https://doi.org/10.1108/eum000000006155>
- Laroche, M., Bergeron, J., & Barbaro, F.G. (2001b). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520. <https://doi.org/10.1108/eum000000006155>
- Lastovicka, J., Bettencourt, L., Hughner, R., & Kuntze, R. (1999). Lifestyle of the Tight and Frugal: Theory and Measurement. *Journal of Consumer Research*, 26(1), 85–98. <https://doi.org/10.1086/209552>
- Liere, K. D., & Dunlap, R. E. (1978). Moral Norms and Environmental Behavior: An Application of Schwartz's Norm-Activation Model to Yard Burning<sup>1</sup>. *Journal of Applied Social Psychology*, 8(2), 174–188. <https://doi.org/10.1111/j.1559->
- Liere, K. D. V., & Dunlap, R. E. (1980). The Social Bases of Environmental Concern: A Review of Hypotheses, Explanations and Empirical Evidence. *Public Opinion Quarterly*, 44(2), 181. <https://doi.org/10.1086/268583>
- Liobikienė G, Poškus MS. The importance of environmental knowledge for private and public sphere pro-environmental behavior: modifying the value-belief-norm theory. *Sustainability*. 2019 Jun 16;11(12):3324.
- 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. <https://doi.org/10.1080/00224549709595430>
- McCarty, J. A., & Shrum, L. (2001). The Influence of Individualism, Collectivism, and Locus of Control on Environmental Beliefs and Behavior. *Journal of Public Policy & Marketing*, 20(1), 93–104. <https://doi.org/10.1509/jppm.20.1.93.17291>
- Minton, A. P., & Rose, R. L. (1997). The Effects of Environmental Concern on Environmentally Friendly Consumer Behavior: An Exploratory Study. *Journal of Business Research*, 40(1), 37–48. [https://doi.org/10.1016/s0148-2963\(96\)00209-3](https://doi.org/10.1016/s0148-2963(96)00209-3)

Miller D, Merrilees B, Coghlan A. Sustainable urban tourism: Understanding and developing visitor pro-environmental behaviours. *Journal of Sustainable Tourism*. 2015 Jan 2;23(1):26-46.

- Mostafa, M. M. (2007). Gender differences in Egyptian consumers? Green purchase behaviour: the effects of environmental knowledge, concern and attitude. *International Journal of Consumer Studies*, 31(3), 220–229. <https://doi.org/10.1111/j.1470-6431.2006.00523.x>
- Paço, A. D., & Varejão, L. (2010). Factors affecting energy saving behaviour: a prospective research. *Journal of Environmental Planning and Management*, 53(8), 963–976. <https://doi.org/10.1080/09640568.2010.495489>
- Pepper, M., Jackson, T., & Uzzell, D. (2009). An examination of the values that motivate socially conscious and frugal consumer behaviours. *International Journal of Consumer Studies*, 33(2), 126–136. <https://doi.org/10.1111/j.1470-6431.2009.00753.x>
- Richins, M. L., & Dawson, S. (1992). A Consumer Values Orientation for Materialism and Its Measurement: Scale Development and Validation. *Journal of Consumer Research*, 19(3), 303. <https://doi.org/10.1086/209304>
- Rick, S. I., Cryder, C. E., & Loewenstein, G. (2008). Tightwads and Spendthrifts. *Journal of Consumer Research*, 34(6), 767–782. <https://doi.org/10.1086/523285>
- Roberts, J. A. (1995). Profiling Levels of Socially Responsible Consumer Behavior: A
- Roberts, J. A. (1996). Green consumers in the 1990s: Profile and implications for advertising. *Journal of Business Research*, 36(3), 217–231. [https://doi.org/10.1016/0148-2963\(95\)00150-6](https://doi.org/10.1016/0148-2963(95)00150-6)
- Roberts, J. A., & Bacon, D. R. (1997). Exploring the Subtle Relationships between Environmental Concern and Ecologically Conscious Consumer Behavior. *Journal of Business Research*, 40(1), 79–89. [https://doi.org/10.1016/s0148-2963\(96\)00280-9](https://doi.org/10.1016/s0148-2963(96)00280-9)
- Schreinemachers, D. M., & Ghio, A. J. (2016). Article Commentary: Effects of Environmental Pollutants on Cellular Iron Homeostasis and Ultimate Links to Human Disease. *Environmental Health Insights*, 10, EHI.S36225. <https://doi.org/10.4137/ehi.s36225>
- Franěk, M. (2005). Values and their Relationship to Environmental Concern and Conservation Behavior. *Journal of Cross-Cultural Psychology*, 36(4), 457–475. <https://doi.org/10.1177/0022022105275962>
- Schultz, P. W., & Zelezny, L. C. (1998). Values and Proenvironmental Behavior. *Journal of Cross-Cultural Psychology*, 29(4), 540–558. <https://doi.org/10.1177/0022022198294003>
- Straughan, R.D. and Roberts, J.A. (1999), "Environmental segmentation alternatives: a look at green consumer behavior in the new millennium", *Journal of Consumer Marketing*, Vol. 16 No. 6, pp. 558-575. <https://doi.org/10.1108/07363769910297506>
- Stern, P. C. (1992). Psychological Dimensions of Global Environmental Change. *Annual Review of Psychology*, 43(1), 269–302. <https://doi.org/10.1146/annurev.ps.43.020192.001413>

- Stern, P. C. (2000). New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, 56(3), 407–424. <https://doi.org/10.1111/0022-4537.00175>
- Stern, P. C., & Dietz, T. (1994). The Value Basis of Environmental Concern. *Journal of Social Issues*, 50(3), 65–84. <https://doi.org/10.1111/j.1540-4560.1994.tb02420.x>
- Straughan, R. D., & Roberts, J. A. (1999). Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558–575. <https://doi.org/10.1108/07363769910297506>
- Thibault, L. (2009). Globalization of sport: An inconvenient truth. *Journal of Sport Management*, 23, 1–20.
- Wang, H., Ma, B., and Bai, R. (2019). How does green product knowledge effectively promote green purchase intention? *Sustainability* 11:1193. doi: 10.3390/su11041193
- Wang, J., Tao, J., and Chu, M. (2020). Behind the label: Chinese consumers' trust in food certification and the effect of perceived quality on purchase intention. *Food Control* 108:106825. doi: 10.1016/j.foodcont.2019.106825
- Wesley, SP. (2001). The Structure Of Environmental Concern: Concern For Self, Other People, and the Biosphere. *Journal of Environmental Psychology*, 21(4), 327–339. <https://doi.org/10.1006/jevp.2001.0227>
- Wijekoon R, Sabri MF. Determinants That Influence Green Product Purchase Intention and Behavior: A Literature Review and Guiding Framework. *Sustainability*. 2021; 13(11):6219. <https://doi.org/10.3390/su13116219>
- Xiao, Chenyang, Riley E. Dunlap, and Dayong Hong (2013). "The Nature and Bases of Environmental Concern among Chinese Citizens." *Social Science Quarterly* 94, no. 3 (2013): 672–90. <http://www.jstor.org/stable/42864155>.
- Yavetz, Daphne Goldman & Sara Pe'er (2009) Environmental literacy of pre-service teachers in Israel: a comparison between students at the onset and end of their studies, *Environmental Education Research*, 15:4, 393-415, DOI: 10.1080/13504620902928422
- Yusliza MY, Amirudin A, Rahadi RA, Nik Sarah Athirah NA, Ramayah T, Muhammad Z, Dal Mas F, Massaro M, Saputra J, Mokhlis S. An investigation of pro-environmental behaviour and sustainable development in Malaysia. *Sustainability*. 2020 Aug 31;12(17):7083.
- Zhang, P., Sun, H., Yu, L., and Sun, T. (2013). Adsorption and catalytic hydrolysis of carbaryl and atrazine on pig manure-derived biochars: impact of structural properties of biochars. *J. Hazard. Mater.* 244, 217–224. doi: 10.1016/j.jhazmat.2012.11.
- Xu, X., Hua, Y., Wang, S., and Xu, G. (2020). Determinants of consumer's intention to purchase authentic green furniture. *Resour. Conserv. Recycl.* 156:104721. doi: 10.1016/j.resconrec.2020.104721