

EFFECT OF THE HIGH PRICE OF GREEN PRODUCTS ON THE PURCHASE DECISIONS OF ENVIRONMENTALLY CONCERNED CONSUMERS

Bijit Ghosh*

ABSTRACT

Control of consumption is an exceedingly uphill task in the 21st century; hence there is an encouragement of research on substitute routes to direct towards an environment friendly lifestyle. Negative effects on the environment are escalated by both the manufacturing and the usage of non-environment-friendly products and services. An optimum ecological consumption depends on the extent of consumers' intention towards purchasing of "green" products. Numerous research have been carried out inspecting the process of identification, analysing the behaviour and also deciphering the needs of the green consumer. Findings also state in spite of conveying a high degree of approval for alternative and sustainable purchase, consumers have not reciprocated the school of thought into actions. This study examines the effect which price sensitivity has on the pro-environmental attitude and finally green purchase intention. The primary data collection was done through the survey method from 140 Indian customers contacted on email through structured questionnaires. The empirical findings disclose that while the green purchase intention is increased by the pro-environmental attitudes, there is a moderating role of price sensitivity in the negative sense. The study has been concluded by putting forward recommendations for marketers and policymakers regarding forthcoming eco-friendly campaigns.

Keywords: *Pro-environmental Attitude, Green Purchase Intention, Green Consumer Behaviour, Price Sensitivity, Green Consumer, Green Marketing Campaigns.*

Introduction

Since the last two decades, a rising concern among the general public about the environmental issues is fuelled by geological and climate change (Skogen et al., 2018). Green consumer behaviour is an ecologically responsible and ethical purchase behaviour keeping the concern for the environment into perspective (Gonçalves et al., 2016). One of the productive ways to abolish environmental problems is the evolution and dissipation of eco-friendly products among the general public along with them adopting the same in daily consumption (Nguyen et al., 2019).

Pro-environmental attitude or in other words, the degree of thought process which goes into the purchase decision by keeping the environmental concerns into consideration, is usually regarded to be an immediately preceding purchase intention of eco-friendly products (Moser, 2015). Also, since the green products are priced higher than the others, often customers choose otherwise. Therefore, it is imperative that the price of the eco-friendly products has an influence on the purchasing intention. This study will inspect the extent to which pro-environmental attitude is related to green purchase intention and the influence of price sensitivity, which has the moderating effect on this relationship.

Literature Review and Hypothesis

- **Green Purchase Intention**

The entire process of which product the customer purchases, uses the product and disposes it particularly in the domain of eco-friendly products hence diminishing the harmful impact of the consumption on the natural environment is called Green Consumer Behaviour (Pagiaslis & Krontalis, 2014). Furthermore, the intent to a certain behaviour can be referred to as the level to which an individual

* Indian Institute of Technology, Delhi, India.

has made a deliberate plan of action to follow or not follow some specified forthcoming behaviour (Warshaw & Davis, 1985) Many of the previous research done have concluded that green consumer behaviour is positively affected by green purchase intention (Mamun et al., 2018).

With the purpose of accurately predicting green purchase intention, scholars have established fresh psychological constructs like “perceived green value”, “perceived self-identification” and “environmental knowledge” by building upon the Theory of Planned Behaviour (Zhang et al., 2019). Nevertheless, the studies having the Theory of Planned Behaviour as a focal point make it difficult to decipher the complexity of green consumer behaviour as they have neglected the influence of situational factors. The pillars of decision-making are employed to establish the process of decision-making of an individual’s responsible behaviour while deducing the logic to purchase eco-friendly products (Xu et al., 2020). The three constructs of Rationalism, Empiricism and Behaviourism govern the decision making of the responsible consumers to purchase eco-friendly products by paving a way for an individual to carry out clear purchase decisions (Maniatis, 2016). The viewpoint of the Rationalism construct states that while in the light of purchasing green products to make practicable decisions, the consumers will try to assimilate as much information as possible (Xu et al., 2020). But the fact remains that, in reality, a consumer may not exhibit meticulous logical purchasing behaviour as they may not employ this time-taking and tedious process of information search at every instance. The construct of Behaviourism suggests that along with knowledge, an individual owns a certain set of tactical skills that estimates the time and effort required to carry out the entire process of green purchase decision making and subsequently correlate an effective strategy for the desired level of effort required (Jonell et al., 2016). Lastly, Empiricism suggests that the consumers, rather than rational factors, may stress upon the effect of emotional elements on the green purchase while making a decision (Liang et al., 2019).

- **Pro-Environmental Attitude**

Green Purchase Intention, which is extensively employed to shed light on Green Consumer Behaviour, Sustainable Purchase is directly influenced by Pro-Environmental Attitude (Husted et al., 2014). Until recent years, researchers considered Pro-Environmental Attitude equivalent to Environmental Concern, hence not clearly defining Pro-Environmental Attitude (Pienaar et al., 2013). Though some have found it tough to provide the factors for Pro-Environmental Attitude, others believe that Pro-Environmental Attitude is a self-driven agenda (Fujii, 2006). Hence, there exists a variety of operational concepts between different researchers regarding Pro-Environmental Attitude and the notion is usually a working definition. The first model to quantitatively define Pro-Environmental Attitude is the New Ecological Paradigm (NEP) (Dunlap & Van Liere, 1978). As of now, Pro-Environmental Attitude has been categorized into two divisions: attitude which is holistic and comprehensive (e.g., attitude towards the effect of human activities on the escalation of environmental problems) and attitude towards a particular environmental issue (e.g., attitude towards the overconsumption of electricity). The first more generic categorization, which appraises Pro-Environmental Attitude as holistic and comprehensive in the sight of environmental issues has been employed for this study.

More often than not, individuals who are mentally more prepared to acknowledge the environmental issues and take measures towards environment preservation have a greater sense of Pro-Environmental Attitude (McDonald et al., 2015). The findings also indicate that the attitude differed significantly between consumers portraying green behaviour and those who are not (Mostafa, 2009). There also have been findings which state that the type and categories of their products also speak a lot about the strength of the Pro-Environmental Attitude of the consumers, given the fact that individuals who were more open to purchase eco-friendly products, were those with higher Pro-Environmental Attitude (Suki, 2016). As per the arguments stated in the studies mentioned above, Pro-Environmental Attitude influences Green Purchase Intention. Hence, the following proposition:

Hypothesis 1

There is a positive influence of Pro-Environmental Attitude on Green Purchase Intention.

- **Price Sensitivity**

Price sensitivity has been explained by past researchers as the influential effect on the consumers through which the consumers exhibit different reactions to price alterations of a single product or the difference in prices of two products (Lichtenstein et al., 1993). Studies have regarded price sensitivity as a precursor to the intention of purchasing an eco-friendly or green product (Stall-Meadows & Davey, 2013). There is a tendency that even though consumers consider themselves as being a concerned personnel towards the well being of the environment, in the actual purchase decision they

would not go for the green products. This is because mostly the price of the eco-friendly products is higher than the other contemporary ones (Malik et al., 2017). For example, it has been shown that if the organic products are not priced at an excess of 20% over the other agricultural products, then the additional number of individuals purchasing the organic products would go up to 78% (Cicia, 2002). It was also found though a proportion of customers (30%) had declared that they were inclined to purchase eco-friendly products, only a minute section (3%) did actually convert their intention into behaviour i.e. purchase the product (Kilbourne & Beckmann, 1998). The rest had declared that they did not buy the product because of the higher price. Hence it can be deduced that even if a consumer has a positive frame of mind towards eco-friendly consumption, this attitude may not turn to behaviour due to the price of the eco-friendly products. Researchers have also found that highly price sensitive customers will be reluctant to purchase the green products than others. Therefore, this facilitates in the construction of the next hypothesis:

Hypothesis 2

Price sensitivity has a moderating role on the relationship between Pro-Environmental Attitude and Green Purchase Intention. Collating, the conceptual framework is devised where the dependent variable is Green Purchase Intention and the independent variable is Pro-Environmental Attitude, while the moderating role is played by Price Sensitivity. The conceptual framework is shown below.

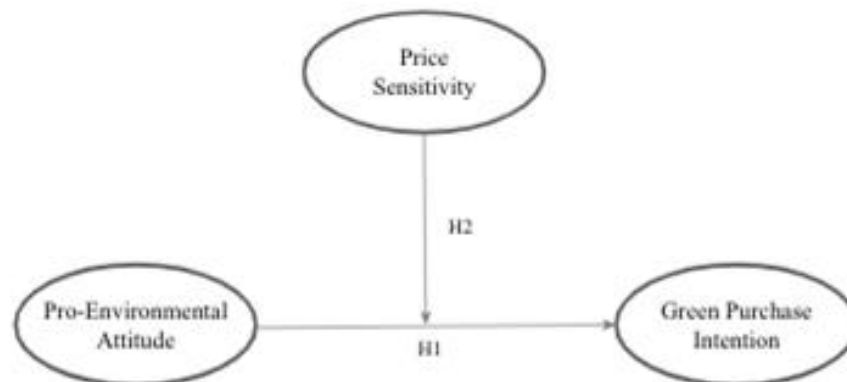


Figure 1: Conceptual Framework

Methodology and Measurement

• Measurement of Variables

Structured questionnaires were used to collect the data, subdivided into 2 sections. The first section had the demographic questions. The second section consisted of the measurement of the three variables: Pro-Environmental Attitude (ATT), Price Sensitivity (PS) and Green Purchase Intention (GPI). 5-point Likert scale was used, the scales of which ranged from strongly disagree to strongly agree.

NEP scale (Dunlap & Van Liere, 1978) was used to inspect the various constructs of Pro-environmental Attitude which consists of 15 items. The NEP scale is reflected by the odd items (1, 3, 5, 7, 9, 11, 13, and 15) promoting a pro-environmental outlook and heightened ecological friendliness. Dominant Social Paradigm (DSP) is represented by the items which are of even number (2, 4, 6, 8, 10, 12 and 14). DSP supports the ideas of economic elevation and industrial progress (Dunlap & Liere 1984). There are 5 sub-scales in which the 15 items are subdivided into:

- Growth limits: (i) “we are approaching the limit of the number of people the Earth can support”; (vi) “the Earth has plenty of natural resources if we just learn how to develop them”; (xi) “the Earth is like a spaceship with very limited room and resources”
- Anti-anthropocentrism: (ii) “humans have the right to modify the natural environment to suit their needs”; (vii) “plants and animals have as much right as humans to exist”; (xii) “humans were meant to rule over the rest of nature”
- Fragile nature of Natural Balancing: (iii) “when humans interfere with nature it often produces disastrous consequences”; (viii) “the balance of nature is strong enough to cope with the impacts of modern industrial nations”; (xiii) “the balance of nature is very delicate and easily upset”

- Human supremacy rejection: (iv) “human ingenuity will insure that we do not make the Earth unliveable”; (ix) “despite our special abilities, humans are still subject to the laws of nature”; (xiv) “humans will eventually learn enough about how nature works to be able to control it”
- Possibility of eco-crisis: (v) “humans are seriously abusing the environment”; (x) “the “ecological crisis” facing mankind has been exaggerated”; (xv) “if things continue on their present course, we will soon experience a major ecological catastrophe”

Eight-item scale was employed to measure Price Sensitivity (Lichtenstein et al., 1993). These were divided into two parts namely, Price Importance and Price Search Intention. The items of Price Importance are: (i) “When I choose a product, the price is the most important factor”; (ii) “I rely on the price to judge the worth of something I buy”; (iii) “when I buy a product, I will select the cheapest”; (iv) “I always buy the lowest price.” The four items of Price Search Intentions are: (v) “before making a purchasing decision, I will enter more than one store to compare prices in order to find a lower price”; (vi) “I think it’s worthwhile to spend energy on many stores and find low-priced products”; (vii) “I think it is worth it to take time to go into a number of stores to look for a low-cost product”; and (viii) “before making a purchasing decision, I need to collect a lot of information on the price of the product”. Four-item scale was employed to measure Green Purchase Intention (Sheng et al., 2019) which are as follows: (i) I want more information about eco-friendly LED lights; (ii) I want to introduce eco-friendly LED lights to my family; (iii) I will recommend eco-friendly LED lights to my friends and relatives; and (iv) I will purchase eco-friendly LED lights if the need may arise.

• Data Collection and Sample

These questionnaires were mailed to the employees of an IT company. Each respondent was randomly selected. The eco-friendly product which was selected for the questionnaire was LED lights which encouraged energy. One of the biggest motivations behind selecting LED lights as the product was that they are widely known by the general public and people do not necessarily give a lot of thought process prior to the purchase. 140 questionnaires were disbursed out of which 134 were returned and after the cleaning of the data, it was seen that 129 were valid, hence fetching a response rate of 92.14%. The demographic details are mentioned in Table 1.

Table 1: Demographics (N=129)

Items	Classification	Sample	Percentage (%)
Gender	Male	72	60
	Female	57	53.4
Age	Under 25	27	20.93
	25–35	36	27.91
	35–45	33	25.58
	45–55	24	18.60
	Above 55	9	6.98
Education	Diploma	2	1.55
	Bachelors	76	58.91
	Masters	51	39.53
	Doctorate	0	0.00
Staying	With Family	66	51.16
	With Flatmates	41	31.78
	With Partner	2	1.55
	Alone	20	15.50
Income	< 2 LPA	3	2.33
	2 - 5.99 LPA	77	59.69
	6 - 9.99 LPA	35	27.13
	10 - 13.99 LPA	10	7.75
	>= 14 LPA	4	3.10

Data Analysis and Hypothesis Testing

• Reliability and Validity Analysis

Cronbach’s coefficients were examined to test the reliability of the study. Usually, Cronbach’s coefficient of 0.7 is the minimum acceptable value. The Cronbach’s coefficient of Pro-Environmental Attitude (0.769), Price Sensitivity (0.773) and Green Purchase Intention (0.821) were all above the minimum acceptable value of 0.7. Hence there was acceptable reliability of the test.

Table 2: Reliability and Validity Analysis

Constructs	Cronbach's	CR	AVE	Sq Root of AVE
ATT	0.769	0.757	0.611	0.782
PS	0.773	0.782	0.502	0.709
GPI	0.821	0.831	0.758	0.871

The three main types of validity are studied here, namely construct, content and criterion validity. Discriminant and Convergent validity were studied to analyse the Construct Validity. To check for discriminant validity, the Average Variance Extracted (AVE) needs to be calculated and the square root value of AVE for each variable should not be lesser than the corresponding correlation value between that variable and any other variables (Fornell & Larcker, 1981). The lowest value of square root of the AVE was 0.709 and the largest correlation value was 0.307 (Table 3) so there was an acceptable discriminant validity in the study. All three variables had an AVE value of more than 0.5 with the CR values exceeding 0.7. Therefore the variables had acceptable levels of convergent validity. For ensuring Content validity, the study had adopted existing scales from previous studies, which had been proved to be valid by being tested empirically. The study used correlation analysis to test Criterion validity, as explained below.

- **Descriptive Statistics and Correlation Analysis**

The descriptive statistics of all the three variables are presented below along with the correlation analysis. According to the correlation coefficient matrix, it can be seen that Pro-Environmental Attitude is positively correlated with Green Purchase Intention ($r = 0.318$, $p < 0.05$).

Table 3: Descriptive Statistics and Correlation ($p < 0.05$, $N = 129$)

Constructs	Mean	Standard Deviation	ATT	PS	GPI
ATT	4.015	0.029	1		
PS	3.284	0.026	-0.055	1	
GPI	3.816	0.031	0.318	0.307	1

- **Hypothesis Testing**

- **The Main Effect Analysis**

The relationship between Pro-Environmental Attitude and Green Purchase Intention has been explored using regression analysis in AMOS software. The relationship, as predicted by Hypothesis 1, is supported ($\beta = 0.234$, $p < 0.05$). Therefore findings confirm the fact to meet green purchase intention and support environmental trends, the ecological responsibility of an individual along with the eco-friendly attitude must be enhanced.

Table 4: Regression Analysis ($p < 0.05$, $N = 129$)

Hypothesis	Proposed Influence	Path Coefficient	Standard Error	t-Value	Inference
H1	Positive	0.234	0.079	2.635	H1 is supported

- **The Moderating Effect Analysis**

Process macro (Model 1) was used to inspect the moderation influence of price sensitivity by employing the (Hayes, 2018). The results are collated in the below table.

Table 5: Moderating Effect Analysis ($p < 0.05$, $N = 129$)

Model 1	Coefficient	S.E.	t-Value	P-Value	LLCI	ULCI
Constant	-3.048	0.819	-3.893	0.002	-4.66	-1.436
ATT	1.195	0.237	5.176	0.008	0.757	1.633
PS	1.32	0.265	4.983	0.003	0.813	1.827
Interaction 1	-0.319	0.078	-4.481	0.004	-0.418	-0.161

It is evident from the values in the table that zero was not a part of the range in the interaction of Pro-environmental attitude and price sensitivity (95% CI = -0.418 to -0.161). Additionally, there was a negative coefficient of interaction ($\beta = -0.319$). This indicates that price sensitivity moderates the relationship between pro-environmental attitude and green purchase intention and that too in a negative sense. This supports Hypothesis 2.

Managerial Implications

Policy makers would be greatly benefited from the findings of this study. Since the findings state that a pro-environmental attitude encourages green purchase intention, the integration of education regarding the impact of human activities on the environment can be carried out in the national education system. This will help inculcate the eco-friendly behaviour and sustainable thinking from an early age. Additionally, marketers can implement their marketing strategies of green products by highlighting the benefits that can be offered so that it eclipses the price. For example, by comparing with non eco-friendly products, organisations should make consumers more attentive to the unique features and benefits like low carbon emission, energy saving, health etc.

Limitations and Scope for Future Research

Two specific limitations to this study are identified. Firstly, since the study was focussed in India and employed a specific product (LED lights) the generalizability of the results has to be confirmed. There is a need to research on the variables using a wide variety (high priced and low priced, electronics and non-electronics, household and commercial) products in different countries. Secondly, only the moderating role of price sensitivity is studied here. The other moderating factors like availability of green products, eco literacy, policies of governments have not been taken into account. In the future research, these factors will be considered.

References

- Al Mamun, A., Mohamad, M. R., Yaacob, M. R. B., & Mohiuddin, M. (2018). Intention and behavior towards green consumption among low-income households. *Journal of environmental management*, 227, 73-86.
- Cicia, G., Del Giudice, T., & Scarpa, R. (2002). Consumers' perception of quality in organic food. *British Food Journal*.
- Dunlap, R. E., & LIERE, K. D. (1984). Commitment to the dominant social paradigm and concern for environmental quality. *Social science quarterly*, 65(4), 1013.
- Dunlap, R. E., & Van Liere, K. D. (1978). The "new environmental paradigm". *The journal of environmental education*, 9(4), 10-19.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- 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.
- Gonçalves, H. M., Lourenço, T. F., & Silva, G. M. (2016). Green buying behavior and the theory of consumption values: A fuzzy-set approach. *Journal of Business Research*, 69(4), 1484-1491.
- Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, 85(1), 4-40.
- Husted, B. W., Russo, M. V., Meza, C. E. B., & Tilleman, S. G. (2014). An exploratory study of environmental attitudes and the willingness to pay for environmental certification in Mexico. *Journal of Business Research*, 67(5), 891-899.
- Banovic, M., Reinders, M. J., Claret, A., Guerrero, L., & Krystallis, A. (2019). A cross-cultural perspective on impact of health and nutrition claims, country-of-origin and eco-label on consumer choice of new aquaculture products. *Food Research International*, 123, 36-47.
- Kilbourne, W. E., & Beckmann, S. C. (1998). Review and critical assessment of research on marketing and the environment. *Journal of marketing management*, 14(6), 513-532.
- Liang, D., Hou, C., Jo, M. S., & Sarigöllü, E. (2019). Pollution avoidance and green purchase: The role of moral emotions. *Journal of Cleaner Production*, 210, 1301-1310.
- Lichtenstein, D. R., Ridgway, N. M., & Netemeyer, R. G. (1993). Price perceptions and consumer shopping behavior: a field study. *Journal of marketing research*, 30(2), 234-245.
- Malik, C., Singhal, N., & Tiwari, S. (2017). Antecedents of consumer environmental attitude and intention to purchase green products: moderating role of perceived product necessity. *International Journal of Environmental Technology and Management*, 20(5-6), 259-279.

- McDonald, S., Oates, C. J., Thyne, M., Timmis, A. J., & Carlile, C. (2015). Flying in the face of environmental concern: why green consumers continue to fly. *Journal of Marketing Management*, 31(13-14), 1503-1528.
- Moser, A. K. (2015). Thinking green, buying green? Drivers of pro-environmental purchasing behavior. *Journal of consumer marketing*.
- Mostafa, M. M. (2009). Shades of green: A psychographic segmentation of the green consumer in Kuwait using self-organizing maps. *Expert Systems with Applications*, 36(8), 11030-11038.
- Nguyen, T. T. H., Yang, Z., Nguyen, N., Johnson, L. W., & Cao, T. K. (2019). Greenwash and green purchase intention: The mediating role of green skepticism. *Sustainability*, 11(9), 2653.
- Pagiaslis, A., & Krontalis, A. K. (2014). Green consumption behavior antecedents: Environmental concern, knowledge, and beliefs. *Psychology & Marketing*, 31(5), 335-348.
- Pienaar, E. F., Lew, D. K., & Wallmo, K. (2013). Are environmental attitudes influenced by survey context? An investigation of the context dependency of the New Ecological Paradigm (NEP) Scale. *Social science research*, 42(6), 1542-1554.
- Sheng, G., Xie, F., Gong, S., & Pan, H. (2019). The role of cultural values in green purchasing intention: Empirical evidence from Chinese consumers. *International Journal of Consumer Studies*, 43(3), 315-326.
- Skogen, K., Helland, H., & Kaltenborn, B. (2018). Concern about climate change, biodiversity loss, habitat degradation and landscape change: Embedded in different packages of environmental concern?. *Journal for Nature Conservation*, 44, 12-20.
- Stall-Meadows, C., & Davey, A. (2013). Green marketing of apparel: Consumers' price sensitivity to environmental marketing claims. *Journal of Global Fashion Marketing*, 4(1), 33-43.
- Suki, N. M. (2016). Consumer environmental concern and green product purchase in Malaysia: structural effects of consumption values. *Journal of Cleaner Production*, 132, 204-214.
- Warshaw, P. R., & Davis, F. D. (1985). The accuracy of behavioral intention versus behavioral expectation for predicting behavioral goals. *The Journal of psychology*, 119(6), 599-602.
- Xu, X., Hua, Y., Wang, S., & Xu, G. (2020). Determinants of consumer's intention to purchase authentic green furniture. *Resources, Conservation and Recycling*, 156, 104721.
- Zhang, L., Fan, Y., Zhang, W., & Zhang, S. (2019). Extending the theory of planned behavior to explain the effects of cognitive factors across different kinds of green products. *Sustainability*, 11(15), 4222

