

Pro-environmental Concern Influencing Green Buying: A Study on Indian Consumers

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Abstract

Objectives – The main objectives of the study are to determine the consumers' pro-environmental concerns, knowledge of environmental issues, awareness of eco-friendly products, and to make recommendations based on the findings about their "Green Buying" behaviour in Indian context. Research suggests that consumers who are highly involved and concerned with the environmental issues prefer to buy eco-friendly products and are willing to pay a higher price for such products. This study investigates if pro-environmental concerns among consumers in India are predictive of their any green buying behaviour.

Methodology – Data for this study was collected from a highly educated sample of 200 respondents using a structured questionnaire. The questionnaire contains questions to measure general consumers' environmental concern, awareness of eco-friendly products, trust in performance of eco-friendly products and green buying behaviour. Descriptive statistics, factor analysis and correlation techniques were used to analyze the findings of this study.

Results – The results indicate that consumers' pro-environmental concerns significantly affect their green buying behaviour. Also, consumers are willing to buy eco-friendly products but not many are willing to pay a higher price for such products. The survey findings disclose that consumers' awareness towards eco-friendly products and their environmental concern impacts their green buying behaviour.

Conclusions – While environmental concerns could emerge as one of the powerful drivers that influence purchase, it has actually not resulted in the ability to command a sustainable premium: consumers are willing to buy eco-friendly products, but not pay the higher price. Increased consumer demand will help reduce costs in production of eco-friendly products. Awareness among consumers that their buying choices can make a difference to the environment should be promoted to accelerate the consumption of eco-friendly products.

Keywords: Eco-friendly products, Pro-environmental concern, Green buying, Willingness to pay

1. Introduction

The rapid economic growth in the past years have witnessed increasing consumers' consumption worldwide causing environmental deterioration through over-consumption and utilization of natural resources (Chen & Chai, 2010). It is anticipated that if the current trend of economic growth and irresponsible consumption pattern

continues, the environment degradation would worsen. The consequences of environmental degradation are global warming, depletion of stratospheric ozone layer, pollution of sea and rivers, noise and light pollution, acid rain and desertification (Ramlogan, 1997).

On a global level, there is an increased awareness of global warming and adverse climate conditions and as a result there is a spur in interest toward environmental protection and sustainable development. A general deterioration in the physical environment is driving individuals and organizations to implement changes for improving the current state of the environment.

As such, shift towards more sustainable consumption patterns is required and it is important to increase people's environmental awareness and consciousness. People, as consumers, can reduce their impact on environment and make a positive difference through their purchasing decisions. The belief is that the consumer's pro-environmental concern is one of the determinants of their "green buying" behaviour i.e., buying and consuming products that are environmentally beneficial (Mainieri et al., 1997).

Consumers can reduce their impact on environment and make a difference through their purchasing decisions. The rising number of consumers who prefer and are willing to buy eco-friendly products are creating opportunity for businesses that are using "eco-friendly" or "environmentally friendly" as a component of their value proposition.

Today, environmental or green marketing, a strategic marketing approach is a recent focus in business endeavours (Ottman, 1998). Increasing focus on environmental issues can be seen as an indication that pro-environmental concerns have emerged as a potential strategic concern for businesses (Polonsky & Kilbourne, 2005; Menon & Menon, 1997). With an increased in the social and political pressures, profit driven firms embraced green marketing strategies and exploited these environmental issues as a source of competitive advantage (Chen & Chai, 2010). The businesses were motivated to adopt the concept of green marketing provided that consumers demonstrate a high degree of environmental concern and hence translate this into environmental friendly purchasing commitment.

Severity of environmental deterioration (Meadows et al., 1972) is necessitating technological changes but also changes in attitude and behaviour of consumers (Weigel et al., 1978). Consumers' growing concern for the environment and environment related issues are driving businesses across the globe to offer a wide range of eco-friendly products choices across a wide variety of product categories: from fashion, cars to gadgets. Businesses that offer products which are designed and manufactured with an environmental marketing mix have a strategic competitive advantage. Environmental or ecological issues are of importance to consumers who are environmentally conscious when making a purchase. Hence, a better understanding of consumer preferences in this instance should allow businesses to acquire more market-applicable approach to sustain in the competitive market.

Consumers who are concerned with the environment and are knowledgeable about the environmental issues when shopping try to purchase only eco-friendly products (Laroche, Bergeron & Barbaro-Farleo, 2001). Increasing pro-environmental concerns and awareness of eco-friendly products among consumers have resulted in their green buying behaviour. Recent increase in the number of individuals who are willing to pay more for the eco-friendly suggests that the market for eco-friendly products is ever expanding (Laroche et al., 2001).

Previous research conducted internationally suggests that the eco-friendly category of consumers is continuing to evolve and that consumers tend to vary in terms of their acceptance of eco friendly products and lifestyle (Jungermann & Jungermann, 2010). Buying eco-friendly products have become all the rage among consumers with pro-environmental concerns.

In India, it is reported that consumers are still easy prey to high tech products (Chitra, 2007) and as such, the market for eco-friendly products is yet to become mainstream. There is very little academic information available about green consumers in India. It is within the background of this research gap that the present research was conducted to assess Indian consumers' pro-environmental concerns, knowledge of environmental issues, awareness of eco-friendly products, and any potential effect that these factors may have on green buying behavior.

2. Research Gap

The researchers in green marketing area primarily focus on examining green consumers' demographic profile. While there is significant knowledge that such studies have produced, an important research gap in Indian context has emerged by not assessing any predictive relationships that may govern green buying behaviour in the process of adoption of eco-friendly products. The previous researches have not highlighted the predictive

relationship of pro-environmental concern to green buying behaviour in Indian context.

This study attempts to find out if consumers' pro-environmental concerns, awareness and knowledge about environment related issues impact their buying behaviour to prefer and buy eco-friendly products and pay a premium price for such products.

3. Research Objectives

The primary objectives of this study include:

- (i) To identify if consumers prefer to buy eco-friendly products and are willing to pay more for eco-friendly products.
- (ii) To assess if consumers' pro-environmental concerns, knowledge of environmental issues, and awareness of eco-friendly products affect their green buying behaviour.

4. Literature Review

Businesses across the globe are bestowed with the responsibility of promoting sustainable development thereby preserving the rare natural resources to meet the needs of the forthcoming generation. Changes in the condition of natural resources and their long term negative impact has led to some realization about human responsibility towards nature. This realization has led to development of eco-friendly consumption patterns among consumers. Grunert (1993) reported that about 40% of environmental degradation has been brought about by the consumption activities of private households. The need for eco-friendly products is gradually increasing on account of persistent raise in the concern for environment related issues. Fortunately, eco-friendly consumption and spending patterns has led the marketers to understand the eco-friendly attitude of the consumers and come up with the marketing mix which preserves environmental resources and at the same time deliver value added products and services (Chitra, 2007). Some of the greatest challenges faced by these firms are changes in consumer preferences for the eco-friendly products, suspicion of eco-friendly advertising claim, unfavorable consumer perception of eco-friendly products and the high cost invested in developing eco-friendly products (Chen & Chai, 2010).

Green marketing is considered as one of the major trends in modern businesses (Kassaye, 2001; McDaniel & Rylander, 1993; Pujari & Wright, 1996). Environmental ecological or green marketing are similar terms used in literature. is a way to use the environmental benefits of a product or service to promote sales. Belz & Peattie (2008) stated that green marketing and environmental marketing in the late 1980's focused on green consumers who would be willing to pay premium prices for more environmentally friendly products. Many consumers choose products that do not damage the environment over less environmentally friendly products, even if they cost more. With green marketing, advertisers focus on environmental benefits to sell products such as biodegradable diapers, energy-efficient light bulbs, and environmentally safe detergents. Green marketing encourages consumers to use eco-friendly products and manufacturers to develop more environmentally beneficial products.

If a product has a low environmental impact, it is regarded as an eco-friendly product. Mainieri et al., (1997) define eco-friendly products as ecologically safe products that can facilitate the long term goal of protecting and preserving our natural habitat. Pickett-Baker & Ozaki (2008) suggest that eco-friendly products should be supplied by companies with a reputation for reducing environmental impacts from their manufacturing processes.

Most researchers (Dunlap & Van Liere, 1978; Weigel & Weigel, 1978) relate pro-environmental concern to environmental protection. Pro-environmental concern is conceptualized as a general attitude that reflects the extent to which the consumer is worried about the threats to the environment (Alhassan, 2007). Recent studies suggest that the concern for the environmental problems is high (Mainieri *et al.*, 1997). Marketers and researchers seek to explore if pro-environmental concerns among consumers is predictive of their any green buying behaviour.

Green buying can be defined as purchasing and consuming products that are benign towards environment (Mainieri et al., 1997). Some studies suggest that there is a positive relationship between environmental concern and green buying behaviour (Arbuthnot & Lingg, 1975). Although past research indicates that the consumers are concerned with the environment, marketers have found that consumers are price-sensitive when it comes to buying green (Mandese, 1991). Also, consumers' willingness to pay more for eco-friendly products is not always indicative of their green buying behaviour. For example, consumers who recycle waste may not want to buy products made from recycled material. Pickett-Baker & Ozaki (2008) suggest that an individual who is concerned about environment does not necessarily purchase eco-friendly products. The pro-environmental

concern among consumers is likely to lead to green buying behaviour.

As consumers attitudes towards eco-friendly products continue to evolve, green marketing continues to be an issue of global interest. Laroche et al., (2001) suggests that there has been an increase in the number of individuals who are willing to pay more for environmentally friendly products. In 1991, environmentally conscious individuals in America were willing to pay 15-20 percent (Suchard & Polonsky, 1991) as compared 5-10 percent in 1989 (Coddington, 1990). Consumers are willing to help out environment and engaging in green buying could be one such compensatory behaviour. Concerns about environment are making consumers to contribute to the environment positively. This could be the reason for consumers engaging in green buying behaviour.

Also, marketers and researchers seek to explore if pro-environmental concern among consumers is predictive of their any green buying behaviour. Researchers (Dunlap & Van Liere, 1978; Weigel & Weigel, 1978) relate pro-environmental concern to environmental protection. Pro-environmental concern is conceptualized as a general attitude that reflects the extent to which the consumer is worried about the threats to the environment (Alhassan, 2007). Recent studies suggest that the concerns for the environmental problems is high (Mainieri *et al.*, 1997), suggesting a likely increase in green buying behaviour.

The concept of environmentally friendly or eco-friendly products is not new. Since ages, the conservation ethics have been an inseparable part of Indian thought, traditions, and day-to-day consumption. Nikhil Mirashi and Deepti Gupta in DOCC, AERF (2008-09) project reports that since last few decades, the mad quest for the material end and economical progress in India and abroad has become identical with the exploitation of nature in all its appearances. Despite the continued growth of environmental movement all over the world, it has yet to make its impact on the Indian consumers. As a result, it is vital to explore how consumers in India view the environmental issues, and how they behave, especially in their green buying towards environmental friendly products.

5. Methodology

200 questionnaires were distributed to a conveniently generated sample of a highly educated segment of general population. 167 total questionnaires were returned with a response rate of 83.7 per cent. After examination only 134 questionnaires were found usable of which 59 per cent of the respondents were females and 41 per cent males with mean age ranging from 21years to 30 years. The questionnaire was structured as follows. The first part contained 16 dichotomous questions with Yes and No as two possible responses. These questions measured general consumers' knowledge about environmental issues, awareness of eco-friendly products, trust in performance of eco-friendly products and their willingness to pay more for such products.

The second part of the questionnaire consisted of a 5-point scale, used to explore and assess pro-environmental concerns and any potential effect of such concerns on consumers' green buying behavior. The survey scale consisted of 10 items of which 5 items were adapted from Roberts and Bacon's (1997) Ecologically Conscious Consumer Behaviour (ECCB) scale. Scores on the scale items varied from a low of 1 (strongly disagree) to a high of 5 (strongly agree), with disagree, neutral, and agree as interval points.

The questionnaire also included general demographic questions such as age, gender education. Mean, standard deviation, factor analysis and correlation techniques were used to analyze the results. The questionnaire was tested for its reliability. The Cronbach Alpha reliability coefficient for all items in the questionnaire was found to be 0.640, which is in close approximation to the acceptable range. Table 1 indicates the descriptive characteristics of the sample.

6. Findings

Study results indicate that a majority of sample respondents are aware of eco-friendly products and are knowledgeable about environment related issues. Approximately 98% responders stated that they had heard and were aware of eco-friendly products (see Table 2). 95% were aware of the fact that purchasing eco-friendly products will contribute towards a sustainable future (Table 2).

More than half (56%) of the respondents stated that they did not consider the effect on environment while purchasing general day to day products (see Table 3) where as 54% assumed that their purchases were correct from an environmental point of view. 56% of the respondents reported that they checked if the packages were designed to be recycled before making a purchase (Table 3). A relatively higher proportion of respondents (78%) stated that labelling a product as eco-friendly would change their choice of purchase. Further, 82% of the sample respondents considered buying eco-friendly products but only 36% were found to trust the quality of eco-friendly products (Table 3).

Scores on scale items (Table 5) suggest that a majority of respondents describe themselves as being environmentally responsible and are concerned with the environmental and ecological issues. Based on these ratings, we considered items that had mean ratings below the scale midpoint i.e. 3. With item means ranging from 2.34 to 3.87, the relation of the scale items to the pro-environmental concerns and green buying behaviour was assessed.

Item's analysis based on the means in the Table 5 reveals that majority of respondents describes themselves as being environmentally responsible and the consumers try to make efforts to buy eco-friendly products. The respondents reported that they tried to buy more expensive but energy efficient bulbs ($M = 3.87$, $SD = 1.07$). The findings also suggests the consumers are worried about the current environmental state the world is in ($M = 3.77$, $SD = .88$). The respondents indicated that if they understand that products can cause potential damage, then they try not to buy that product ($M = 3.68$, $SD = .98$). The respondents gave importance to buying products that are low in pollutants ($M = 3.67$, $SD = .92$) followed by describing themselves as environmentally responsible ($M = 3.59$, $SD = .88$).

Factor analysis was conducted to identify factors that statistically explain the variation and co-variation among measures. Factor analysis can be viewed as data-reduction technique since it reduces a large number of overlapping measured variables to a much smaller set of factors (Green & Salkind, 2008). In interpreting the factor, only loading of 0.5 or greater on the factor was considered (Igarria et al., 1995).

The items in the scale were subjected to a set of exploratory factor analyses using Varimax rotation with Kaiser Normalization. Based on the sample size, any factor loading greater than 0.5 was assumed to have practical significance (Hair, 1995). Based on Eigenvalues < 1 , the scale (contained 10 items) produced a two- factor solution (see Table 6). The two significant factors were named pro-environmental (3 items), and green buying decision (6 items). The first factor labeled as pro-environmental concern reflects the consumers concern for the degrading environment and depleting natural resources. The second factor labeled as green buying represents consumers' acceptance and willingness to buy eco-friendly products. This factor reflects how pro-environmental concerns enter the decision making process (Roberts & Bacon, 1997).

The two factors were then computed by taking averages of the items within each. Pro-environmental concern was computed by averaging three scale items (V1, V2 and V3) and Green buying behaviour was computed by averaging six scale items (V4, V8 and V10). In order to assess the effect of pro-environmental concern on green buying, Pearson correlation was computed between the two factors. Results suggest (see Table 7) that a strong ($r = 0.64$) and significant ($p < 0.05$) correlation exists, supporting our proposition that pro-environmental concern and green buying behaviour are significantly related.

7. Discussion

One of the objectives of this study was to assess if pro-environmental concerns of consumers affect their green buying behaviour. The results indicate that overall environmental concern is positively related with consumers' green buying or green purchase decisions in the context of their general purchasing behaviour. From the findings and results, it may be suggested that educated consumers tend to be aware of eco-friendly products and are also knowledgeable about environment related issues. Within the sample frame of this study, it may also be suggested that consumers' pro-environmental concern is a likely predictor of their green buying behaviour, although such conclusions may only be drawn after a more rigorous analysis based of a randomly generated dataset. The study suggests that educated Indian consumers are concerned about the environment and such pro-environmental concerns influence their green buying behaviour to some extent, thereby leading to purchase of eco-friendly products.

The results from the descriptive statistics indicate that a majority of respondents are aware of eco-friendly products and tend to choose these products but are not very confident about the quality and, therefore, do not trust eco-friendly products. This may perhaps be created by perceived product performance as well consumers' apprehension of eco-friendly products. It is worth noting that respondents exhibit low levels of willingness to pay a premium price for eco-friendly products, suggesting that green marketers in India may likely consider cost cutting strategies. The results also show that fewer respondents know about environmental problems and their solutions. Environmental concern is still not a strong motive for majority of these well-educated respondents to purchase eco-friendly products. This is in contrast with findings in other countries. One reason for this may be that eco-friendly products are expensive. At the same time, it must also be appreciated that pro-environmental concerns among consumers in economically developed nations seem to be much higher than the developing economies such as India.

8. Limitations

This research was conducted by generating a non-random sample and hence the results may not be generalized beyond the sample frame. These results, however, support a generally prevailing notion that more educated people tend to be green buyers and hence warrant a larger study conducted on a randomly selected sample. Also, the present research was conducted using a self-reporting questionnaire and hence respondents' bias may be a concern, especially in regard to the willingness to pay premium.

9. Implications

The study suggests that pro-environmental concern is a likely predictor of green buying behaviour. This creates an opportunity for developing green market focusing on more educated consumers—the same proposition that has worked in the West. Also, consumers want eco-friendly products from green firms or companies which project their image as being green. The right mix of eco-friendly products and service, sales, marketing, PR and management expertise is needed to target and attract the consumers who may be willing to buy eco-friendly products. Green marketers should identify such segment of consumers and accordingly design and market products at suitable price levels. Since eco-friendly attributes motivate consumers, hence companies should focus on advertising eco-friendly brand labels, in-store displays and pamphlets. Advertisements campaigns may be used to further promote the use of eco-friendly products. Such campaigns can be directed at increasing concerns about environmental issues among consumers and publicize the use of eco-friendly products. Pro-environmental concerns can be raised by advertising that individual buying behaviour can make a difference and can have an impact on the welfare of the environment. It is also important that companies aiming at developing new eco-friendly products should ensure that products perform competitively.

Findings from this work also suggest that the segment of consumers willing to pay more for eco-friendly products in India may not be very large. Even in an educated segment like the one chosen for this study, willing to pay premium receives an underwhelming response. Thus, while environmental concern could emerge as one of the powerful drivers that influence green purchase, it has actually not resulted in the ability to command a sustainable premium: consumers are willing to buy eco-friendly products, but not pay the higher price. It may be important to examine in future studies the effect of disposable income on willingness to pay premium. Increased consumer demand will help reduce costs in production of eco-friendly products. Awareness among consumers that their buying choices can make a difference to the environment should be promoted.

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Table 1. The descriptive characteristics of the subjects

Age (class: 16-20, 21-30, 31-40, 41-50 and 51-60)	
Mean	2.05
Median	2
Gender(per cent)	
Male	41
Female	59
Education(per cent)	
Respondents with Undergraduate Degree	11.9
Respondents with Postgraduate Degree	84
Respondents with Doctorate Degree	3.7

Table 2. Summary of survey results: consumers' awareness and knowledge of eco- friendly products

	Frequency	Percentage (%)
Have you heard about eco-friendly products?		
yes	132	98.5
no	2	1.5
Are you aware of any such products?		
yes	127	94.8
no	7	5.2
Are you aware that purchasing eco-friendly products will contribute to the sustainable future?		
yes	128	95.5
no	6	4.5

Table 3. Summary of survey results: consumers' pro-environmental concern and green buying behaviour

	Frequency	Percentage%
Do you consider your effect on the environment as a consumer before purchasing general day to day products?		
yes	76	56.7
no	58	43.3
Do you consider your purchase correct from the environmental point of view?		
yes	73	54.5
no	61	45.5
Do you consider if the product and its package are designed to be recycled before making a purchase?		
yes	75	56
no	59	44
If the product is eco-labeled, would this information change your choice of purchase?		
yes	105	78.4
no		2
21.6		9
Have you bought or considered buying eco-friendly products available in the market?		
yes	110	82.1
no	24	17.9
Do you trust the quality of eco-friendly products?		
definitely yes	49	36.6
average	74	55.2
definitely not	1	0.7
not sure	10	7.5

Table 4. Summary of survey results: consumers' willingness-to-pay for eco-friendly products

	Frequency	Percentage (%)
Do you agree that the price of eco-friendly products is supposed to be higher?		
yes	75	59
no	59	41
Are you willing to pay more for eco-friendly products?		
yes	92	68.7
no	42	31.3
How much are you willing to pay more for eco-friendly products?		
<5%	56	41.8
5-10%	57	42.5
10-20%	19	14.2
20-30%	2	1.5

Table 5. Mean and Standard deviation Statistics (Scale items adapted from Roberts and Bacon ECCB Scale, 1997)

S. No.	Items	Mean	S. D.*
V1	I would describe myself as environmentally responsible.	3.59	0.886
V2	I care about buying environmentally friendly products.	3.47	0.939
V3	When I purchase products, I try to make efforts to buy products that are low in pollutants.	3.67	0.924
V4	If I understand the potential damage to the environment that some products can cause, I do not purchase those products.	3.68	0.986
V5	I have purchased light bulbs that were more expensive but saved energy.	3.87	1.061
V6	I make every effort to reduce the use of plastic bags.	3.43	1.022
V7	I have convinced members of my family or friends not to buy some products which are harmful to the environment.	3.40	0.990
V8	I am concerned about the current environmental state the world is in.	3.77	0.884
V9	It is of no use worrying about environmental issues: I can't do anything about them.	2.34	1.041
V10	I will not buy a product if the company which sells it is environmentally irresponsible.	3.34	1.011

*S.D. = Standard Deviation

Table 6. Exploratory Factor Analyses for measuring consumers' pro-environmental concern and green buying behaviour

Item No.	Item Description	Factors	
		Pro-environmental concern	Green buying
V1	I would describe myself as environmentally responsible.	.650	
V2	I care about buying environmentally friendly products.	.840	
V3	When I purchase products, I try to make efforts to buy products that are low in pollutants.	.736	
V4	If I understand the potential damage to the environment that some products can cause, I do not purchase those products.		.508
V5	I have purchased light bulbs that were more expensive but saved energy.		.553
V6	I make every effort to reduce the use of plastic bags.		.761
V7	I have convinced members of my family or friends not to buy some products which are harmful to the environment.		.710
V8	I am concerned about the current environmental state the world is in.		.617
V10	I will not buy a product if the company which sells it is environmentally irresponsible.		.624
Eigen values		4.496	1.099
% of variance		40.870	9.993
Cumulative variance		40.870	50.863
Cronbach Alpha Reliability Coefficient for 10 item scale: 0.804			
Extraction Method: Principal Component Analysis			
Rotation Method: Varimax with Kaiser Normalization			

Table 7. Association between Pro-environmental Concern and Green Buying Behaviour

		Green buying Behavior
Pro-environmental Concern	Pearson Correlation	.643
	Sig. (2-tailed)	.000
	N	134