

GREEN PURCHASE INTENTION: THE DIRECT AND INDIRECT INFLUENCES OF ECOLOGICAL RESPONSIBILITY AND PRO-ENVIRONMENTAL ATTITUDE

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Abstract

Environmental degradation enkindled by human civilisation is a snowballing concern. Both manufacturing and consumption of goods and services result in numerous negative impacts on the environment. Consumption control is an exceedingly arduous challenge in the 21st century; hence it is encouraging research on alternative routes to direct towards a more environment friendly lifestyle. Companies aim to design policies to stimulate eco-friendly behaviour by conceptualizing sustainable development. Nurturing ecological consumption is dependent on the extent of consumers' inclination to employ "green" consumer behaviour. Research has been carried out seeking identification, analysis and also deciphering 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. Having said that, there is scant research which has investigated the influence of ecological responsibility on green purchase intention and especially how this relationship has been mediated by pro-environmental attitude. This study examines the effect of ecological responsibility on green purchase intention through the mediation of pro-environmental attitude. The survey method was employed for data collection from 250 Indian consumers via an email questionnaire. The empirical findings disclose that ecological responsibility can heighten pro-environmental attitude and amplify green purchase intention. Pro-environmental attitude increases green purchase intention and plays a mediating role between ecological responsibility and green purchase intention. The theoretical and managerial implications of the results are discussed. The study has been concluded by putting forward recommendations for policymakers regarding forthcoming green marketing campaigns.

Keywords: Ecological responsibility; Pro-environmental attitude; green purchase intention; Green consumer behaviour; Green Consumer; Green marketing campaigns;

1. Introduction

Since the last two decades there is a rising concern among general public about the environmental issues which is fuelled by geological and climate change along with depletion of natural resources (Skogen et al. 2018). Green consumer behaviour, which has attracted the attention of the general public in recent years, 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 the keeping the environmental concerns into consideration, is usually considered to be an immediate predecessor to green purchase intention (Moser 2015). However, the degree of the relationship between pro-environmental attitude and green purchase intention has not been explored in the previous studies. This study will

examine the relationship between the Ecological Responsibility and Green Consumer Behaviour and the degree to which it is mediated by Pro-Environmental Attitude.

2. Literature Review and Hypotheses

2.1. Green Consumer Behaviour

Green consumer behaviour is referred to a type of behaviour which involves the entire process of purchase, usage and disposal particularly in the domain of eco-friendly products hence diminishing the harmful impact of the consumption on the natural environment (Pagiaslis & Krontalis 2014). The theory of planned behaviour (Ajzen 1991) states that, to some extent, the behavioural intention of an individual can be logically extrapolated to predict the actual behaviour. Furthermore, the behavioural intention can be defined as the extent to which an individual has constructed a conscious plan of action to comply or not comply to some specified forthcoming behaviour (Warshaw & Davis 1985). Many of the previous research done in the field of sustainability have concluded that green consumer behaviour is positively affected by green purchase intention (Mamun et al. 2018). Additionally, the factors of influences towards green purchase intention have been also explored by previous researchers (Nguyen et al. 2019; Pagiaslis & Krontalis 2014), which can be sub-divided into three primary branches.

The first section investigates the differences between ecologically responsible consumers and establishes the individual attributes of pro-environmental consumers with the aid of market segmentation theories (Diamantopoulos et al. 2003; Abrahamse & Steg 2009; Sreen 2018). The findings state that significant differences exist between the green purchase behaviour of different individuals, when they are segmented on the basis of sex, age, education, family size and family income (Abrahamse & Steg 2009; Sreen 2018). However a few researchers employ a school of thought that it is not sufficient to establish a holistic and worthwhile valuable dependency as it is only a basic study of the relationship between the demography and the green purchase behaviour (Diamantopoulos et al. 2003). The second section investigates the psychological aspects of the consumers' green purchase behaviour (Donald et al. 2014). With the purpose of accurately predicting green purchase behaviour, 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 makes it difficult to decipher the complicated of green consumer behaviour as they have neglected the influence of situational factors. Thirdly, the pillars of the theory of decision-making are employed on 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 view point 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 green purchase decision making process in the context of eco-friendly products (Liang et al. 2019). Combining the above three branches, existing studies have failed to emphasize green consumer behaviour as a key ecologically responsible behaviour but have described it only as another type of the traditional consumer behaviour. Additionally, the realizable influence of ecological responsibility on green purchase intention has not yet been completely probed into.

2.2. Ecological Responsibility and Green Purchase Intention

The Norm Activation Model (Schwartz 1977) in the context of social psychology provides us with Ecological Responsibility, which has been employed in the studies of numerous disciplines including those of consumer behaviour, pro- environmental sociology and ecological literacy (Slavoljub et al. 2015). Ecological responsibility is referred to a condition where, the driver being societal responsibility concept and environmental well-being and not personal economic concerns, the individual conveys a purpose to act which is directed towards the cure of environmental issues (Stone et al. 1995). There exists a positive association between ecological responsibility and green consumer behaviour which has been investigated in various parts of the world. Studies have revealed Swiss consumers having higher degree of ecological responsibility show greater affinity towards eco-friendly products and services (Kaiser & Scheuthle 2003). At the same time, there exists a significant positive relationship between ecological responsibility and pro-environmental attitude in the case of eco-friendly buildings in the USA (Attaran & Celik 2015).

Previous studies have emphasized that by accommodating ecological responsibility in the model of the Theory of Planned Behaviour, Green Purchase Intention can be understood more precisely (Hines et al. 1987). Studies have also stated a high degree of positive relationship exists between ecological responsibility and green consumer behaviour (Stern et al. 1999). This leads to the fact that the higher sense of ecological responsibility, the more the consumers will be inclined to green consumer behaviour. Ecological responsibility can show the moral attributes of the consumer in solving environmental issues, such as self-control, righteousness and persistence. Going forward with this logic, the robust driver motivating consumers to take up the responsibility of the environmental and exhibit green consumer behaviour is Ecological Responsibility (Wu & Yang 2018). The current study considers that in the context of green consumer behaviour, there is a significant relationship between ecological responsibility and green purchase intention. In other words, ecological responsibility is the mental debt of the consumer while making an attempt to resolve environmental problems, which in turn is also a prevalent factor of green consumer behaviour. Hence, the following proposition:

Hypothesis 1: Ecological Responsibility is positively associated with Green Purchase Intention.

2.3. The Mediating Role of 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, which is usually considered as a predictor of Green Consumer Behaviour (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 a holistic and comprehensive in the sight of environmental issues has been employed for this study.

A significant link between Ecological Responsibility and Pro-Environmental Attitude has been established by the previous researchers (White & Simpson 2013; Sadachar et al. 2016). For example, individuals with greater ecological responsibility concurred that human beings are accountable for the inception and escalation of environmental issues and hence took more notice of the environmental issues and endorsed green purchase (White

& Simpson 2013). There also has been argument that consumers with a higher sense of ecological responsibility consider that human beings are intimately related to the environment, especially when they are accountable for the delicate environmental conditions. They are inclined to put more substance on ecological welfare, and hence would probably be more eager to clear up environmental issues (Sadachar et al. 2016). Collating the points mentioned above, Ecological Responsibility has a significant effect on Pro-Environmental Attitude. Hence, the following proposition:

Hypothesis 2: Ecological Responsibility is positively associated with Pro-Environmental Attitude.

Previous researchers have stated that Green Purchase Intention can be positively influenced by Pro-Environmental Attitude (Suki 2016). More often than not, individuals who are mentally more prepared to acknowledge the environmental issues and take measures towards environment preservation also possess a higher level of Pro-Environmental Attitude (McDonald et al. 2015). There has also been emphasis on the fact that forecasting Green Consumer Behaviour includes the prevalence of constructs of Pro-Environmental Attitude and the findings indicate that the Pro-Environmental 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 is an important factor to Green Purchase Intention. Hence, the following proposition:

Hypothesis 3: Pro-Environmental Attitude is positively associated with Green Purchase Intention.

Based on the trail of reasoning discussed above, this study considers that Ecological Responsibility can impact elements of Green Consumer Behaviour, such as Green Purchase Intention, through Pro-Environmental Attitude. According to a study (Kaiser & Scheuthle 2003), it has been shown that the additional variable of responsibility to the traditional Theory of Planned Behaviour (TPB) model considerably magnified the descriptive potential of the attitudinal variables. Hence the findings clarified that the perception of responsibility was an implicit predictor of them, and subsequently environmental attitude, to a large extent, regulated Green Consumer Behaviour. Studies have also investigated that the individuals who had a better encouragement to purchase the green products and services that were relatively less injurious to the environment were those who more anxious about current day environmental issues (Young et al. 2010). Therefore, the Pro-Environmental Attitude is also affected by the Ecological Responsibility initially before the latter ends up to Green Purchase Intention. Hence, the following proposition:

Hypothesis 4: Pro-Environmental Attitude plays a mediating role between Ecological Responsibility and Green Purchase Intention.

Based on the above discussion, the conceptual framework is devised where the consequent is Green Purchase Intention and the antecedent is Ecological Responsibility, while Pro-Environmental Attitude is a mediator. The conceptual framework is shown in the following figure.

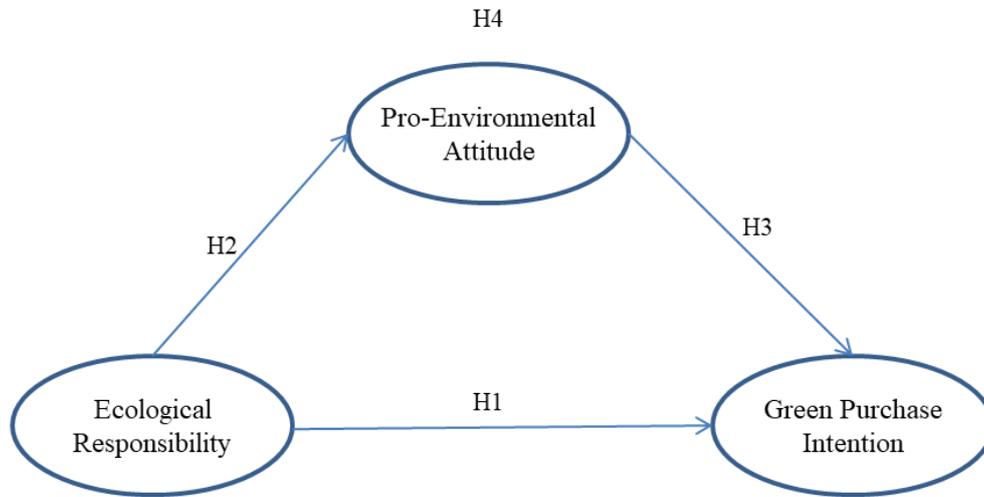


Figure 1. Conceptual Framework

3. Methodology and Measurement

3.1. Measurements of Variables

Structured questionnaires were used to collect the data, which were divided into two sections. The first section consisted of the collection of the demographic information. The second section consisted of the measurement of the three variables: Ecological Responsibility, Pro-Environmental Attitude and Green Purchase Intention. 5-point Likert scale was employed to measure the items ranging from strongly disagree to strongly agree.

Four-item scale was employed to measure Ecological Responsibility (Stern et al. 2010), which are as follows: (1) “I have the ability to save the environment”; (2) “The health of the environment is being affected by my activities”; (3) “I can work to make this world a healthier place to live in”; (4) “I can gain knowledge on how the environment can be repaired”

NEP scale (Dunlap & Van Liere 1978) was used to measure the 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:

- Limits of growth: (1) “we are approaching the limit of the number of people the Earth can support”; (6) “the Earth has plenty of natural resources if we just learn how to develop them”; (11) “the Earth is like a spaceship with very limited room and resources”
- Anti-anthropocentrism: (2) “humans have the right to modify the natural environment to suit their needs”; (7) “plants and animals have as much right as humans to exist”; (12) “humans were meant to rule over the rest of nature”

- Fragility of Natural Balancing: (3) “when humans interfere with nature it often produces disastrous consequences”; (8) “the balance of nature is strong enough to cope with the impacts of modern industrial nations”; (13) “the balance of nature is very delicate and easily upset”
- Rejection of human supremacy: (4) “human ingenuity will insure that we do not make the Earth unliveable”; (9) “despite our special abilities, humans are still subject to the laws of nature”; (14) “humans will eventually learn enough about how nature works to be able to control it”
- Possibility of eco-crisis: (5) “humans are seriously abusing the environment”; (10) “the so-called “ecological crisis” facing humankind has been greatly exaggerated”; (15) “if things continue on their present course, we will soon experience a major ecological catastrophe”

Four-item scale was employed to measure Green Purchase Intention (Sheng et al. 2019) which are as follows: (1) I want more information about eco-friendly LED lights; (2) I want to introduce eco-friendly LED lights to my family; (3) I will recommend eco-friendly LED lights to my friends and relatives; and (4) I will purchase eco-friendly LED lights if the need may arise.

3.2. Data Collection and Sample

These structured questionnaires were distributed to the employees of an IT company on their emails. 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. 190 questionnaires were disbursed out of which 183 were returned and after the cleaning of the data, it was seen that 174 were valid, hence fetching a response rate of 91.58%. The demographic details are mentioned in Table 1.

Items	Classification	Sample	Percentage (%)
Gender	Male	81	46.55
	Female	93	53.45
Age	Under 25	37	21.26
	25–35	51	29.31
	35–45	50	28.74
	45–55	27	15.52
	Above 55	9	5.17
Education	Diploma	5	2.87
	Bachelors	98	56.32
	Masters	69	39.66
	Doctorate	2	1.15
Staying	With Family	86	49.43
	With Flatmates	58	33.33
	With Partner	9	5.17
	Alone	21	12.07

Table 1. Demographics (N=174)

4. Analysis of Data

4.1. Reliability and Validity Analysis

Cronbach's α coefficients were examined for each part of the construct to test the reliability of the study. Usually, Cronbach's α coefficient of 0.7 is the minimum acceptable value. The Cronbach's α coefficient of Ecological Responsibility (0.763), Pro-Environmental Attitude (0.771) and Green Purchase Intention (0.826) were all above the minimum acceptable value of 0.7. Hence the reliability of the test was acceptable.

Constructs	Cronbach's α	Composite Reliability (CR)	Average Variance Extracted (AVE)	Square Root of AVE
Ecological Responsibility	0.763	0.757	0.605	0.778
Pro-Environmental Attitude	0.771	0.782	0.488	0.699
Green Purchase Intention	0.826	0.831	0.769	0.877

Table 2. Reliability and Validity Analysis

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 the absence of discriminant validity, the Average Variance Extracted (AVE) needs to be calculated and the square root value of AVE for each variable should not be lower 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 0.699 and the largest correlation value was 0.462 (Table 3) so there was an acceptable discriminant validity in the study. If the variable has an AVE value of more than 0.5 and composite reliability (CR) value of more than 0.7, then the variable has acceptable convergent validity. Two variables had an AVE value of more than 0.5 while one was approximately 0.5 and all the three variables had 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.

4.2. Descriptive Statistics and Correlation Analysis

The means and standard deviations of all the three variables are presented below along with the correlation analysis. According to the correlation coefficient matrix, Ecological Responsibility had a significant positive correlation with Pro-Environmental Attitude ($r = 0.289$, $p < 0.05$) as well as Green Purchase Intention ($r = 0.462$, $p < 0.05$). Additionally, it can be seen that Pro-Environmental Attitude also had a significant positive correlation with Green Purchase Intention ($r = 0.276$, $p < 0.05$).

Constructs	Mean	Standard Deviation	ER	ATT	GPI
Ecological Responsibility(ER)	4.168	0.031	1		
Pro-Environmental Attitude(ATT)	4.034	0.018	0.289	1	
Green Purchase Intention (GPI)	3.983	0.036	0.462	0.276	1

Table 3. Descriptive Statistics and Correlation ($p < 0.05$, $N = 174$)

4.3. Hypotheses Testing

The Main Effect Analysis

The relationship between Ecological Responsibility, Pro-Environmental Attitude and Green Purchase Intention has been explored in this study using regression analysis in AMOS software. The positive effect of Ecological Responsibility on the Green Purchase Intention, as predicted through H1, is supported ($\beta = 0.564$, $p < 0.05$). H2 is also supported which predicted a positive effect of Ecological Responsibility on Pro-Environmental Attitude ($\beta = 0.231$, $p < 0.05$). The relationship between Pro-Environmental Attitude and Green Purchase Intention, as predicted by H3, is also supported ($\beta = 0.214$, $p < 0.05$). 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.

Hypothesis	Proposed Effect	Path Coefficient	S.E.	t-Value	Results
H1	Positive	0.564	0.046	9.674	H1 is supported
H2	Positive	0.231	0.039	7.137	H2 is supported
H3	Positive	0.214	0.074	2.583	H3 is supported

Table 4. Regression Analysis ($p < 0.05$, $N = 174$)

The Mediating Effect Analysis

The mediation effect by Pro-Environmental Attitude on the relationship between Ecological Responsibility and Green Purchase Intention was tested by bootstrap confidence intervals method in AMOS software. H4, which predicted that there is an indirect effect of Ecological Responsibility on Green Purchase Intention through Pro-Environmental Attitude, held true and significant (effect = 0.041, SE = 0.019), with a confidence interval that didn't include zero (Bias-corrected 95% CI = 0.005 to 0.082, Percentile 95% CI = 0.001 to 0.076). Green Purchase Intention was positively and directly affected by Ecological Responsibility while being positively and indirectly influence through Pro-Environmental Attitude, which is the partial mediator.

Path	Effects	Estimates	SE	Z values	Bootstrapping			
					Bias Corrected 95% CI		Percentile 95% CI	
					Lower	Upper	Lower	Upper
	Total Effects	0.515	0.072	7.139	0.378	0.659	0.379	0.66
ER-ATT-GPI	Indirect Effects	0.041	0.019	2.105	0.005	0.082	0.001	0.076
	Direct Effects	0.474	0.075	6.32	0.341	0.63	0.341	0.631

Table 5. Mediation Analysis

5. Theoretical Contributions

There are two aspects which this study looks at from a fresh perspective. Firstly, an individual perspective of the relationship between Ecological Responsibility and Green Purchase Intention has been established in this study. There is abundance of literature dedicated to green consumption and corporate social responsibility but through the factors of enterprise strategy. Secondly, apart from the consumer's green purchase intention being affected

positively by the ecological responsibility there is also pro-environmental attitude that has a positive effect concurring with the past studies. The mediating nature of pro-environmental attitude between ecological responsibility and green purchase intention was not explored.

6. Managerial Implications

Policy makers would be greatly benefited from the findings of this study. Since the findings state that ecological responsibility encourages green purchase intention, the integration of environmental education and the effect of human activities 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, an individual's ecological responsibility and eco-friendly attitude can be elevated by the policy makers through touch-points, such as social media.

7. Limitations and Future Research Opportunities

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 wide variety (high priced and low priced, electronics and non-electronics, household and commercial) products in different countries. Secondly, only the mediating role of pro-environmental attitude is studied here. The other moderating factors like price sensitivity, availability of green products, eco literacy have not been taken into account. In the future research, these factors will be taken into consideration.

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