# The Influence of Environmental Concerns and Knowledge on the Consumers Purchase Intention of Environmentally Friendly Products in India

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Research Article

# The Influence of Environmental Concerns and Knowledge on the Consumers Purchase Intention of Environmentally Friendly Products in India

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#### **Abstract:**

This paper is an exploratory study on the relationship of environmental concern and environmental knowledge of consumers with their purchase intention of environmentally friendly products in India. A structured questionnaire was distributed to people in various major urban cities in India and various responses were collected towards their perceived views relating to their environmental concern, environmental knowledge, and general views and perceptions related to green products. Furthermore, the responses were analysed and partial least square-structural equation modelling was conducted to study the relationships of environmental concern, environmental knowledge, and purchase intention of environmentally friendly products. It was found that environmental concern had a positive influence on the purchase intention of environmental-friendly products, however environmental knowledge was not found to have a significant relationship with it. Environmental knowledge instead had an indirect influence on the consumers purchase intention by having a positive influence on environmental concern. **Keywords:** Green Products, Consumer Behaviour, Green Marketing, Environmental Concern, Environmental Knowledge

## 1. Introduction:

The world is confronting a large number of issues due to the degradation of the environment and there is a growing need for acting decisively to change existing practices of people to be less damaging and more congenial to the environment. A variety of measures have been considered and taken in multiple places in the world to address the issue of environmental degradation and the role of promotion of education and awareness of environmental issues along with evoking of a feeling of concern of environment in people is an important aspect as a part of the various efforts to promote people to behave in more environmentally friendly manners across the world.

To promote more sustainable behaviour of people a measure in India has been to provide environmental knowledge at various levels of education and that was also in line with the United Nations (UN) declaration for the period of 2005-2014 as the UNDESD or "United Nations Decade of Education for Sustainable Development" that emphasised on the scope and role of public awareness programs, education, etc to encourage people to behave in more sustainable manners. (Ravindranath, 2007) There have been numerous campaigns to educate people in this regard and promote more environment-friendly behaviours of customers. For example, for the objective to eliminate the use of environmentally harmful single-use plastics in India has a focus on the involvement of people to inculcate behavioural change and increasing awareness. (TNN, 2019)

There is a scope of research for the generalisation of the relationship of environment knowledge and environmentally friendly behaviour in different regions of the world. (Polonsky, Vocino, Grau, Garma, & Ferdous, 2012) Furthermore, most of the existing research on this relationship has largely been focused on the developed countries and hence may not be representative of the developing countries. (Amoah and Addoah, 2020)

The role of environmental concerns and knowledge of people to encourage people to adopt environmental-friendly behaviour such as sustainable consumerism is also an important part of this overall relationship for focus, especially in light of the efforts for achieving the Sustainable Development Goals (SDGs). The SDGs include various goals related to achieving sustainable development and are targeted to be achieved by the year 2030. A part of the 12<sup>th</sup> SDG is to transform existing consumption patterns and behaviours of consumers to be more sustainable. (United Nations, n.d) For this, a lack of understanding of the various drivers of the purchase intention for consumers of green products is a major hindrance towards achieving sustainable consumption. (Tseng and Hung, 2013 as cited in Chekima, Wafa, Igau, Chekima & Sondoh, 2016)

This study focuses on India to expand on this relationship and add to the body of knowledge focused on the influence that environmental concern and knowledge has on the purchase intention of consumers towards environmentally-friendly products.

#### 2. Literature Review:

Bhatia and Jain (2013) surveyed consumers in India and noted that consumers were aware of various marketing practices for green products and also displayed a large number of green values. It was found consumers tend to not have a sense of disbelief about the veracity of information to indicate a product is environmentally friendly and have an inclination towards green products. However, there were concerns over both the price to purchase green products and their availability and it was also noted that those who purchase green products were less in number. They noted that awareness of green products, green values etc can have a positive influence on purchase decision of green products by consumers. It was noted that there is an opportunity for green products with an effective green marketing strategy.

Biswas and Roy (2015) studied the consumers behaviour towards green products and identified major factors influencing a set of consumers with and without an existing preference for green products. They noted the favourable opinion of the consumer's peers and social recognition of green products was an important aspect for those with a pre-existing preference, and the influence of price was common to both groups.

Singhal and Malik (2018) surveyed female consumers in India and green marketing of cosmetic products. It was noted that attitudes related to green product's packaging, place of availability, and price were mostly consistent among female consumers irrespective of age, education, and income with the exception being the attitudes towards the price of green products that varied based on the income of the female consumers. It was noted green cosmetic products influenced their purchase behaviour; however, a low inverse relationship was noted to exist between their attitude and purchasing of green products, and this one of the possible causes was considered to be the price and this should be considered when designing an appropriate marketing strategy by an organisation.

Chekima, Wafa,, Igau, Chekima & Sondoh(2016) surveyed consumers in Malaysia and noted the general attitude towards the environment. They noted that attitude towards the environment, cultural value-system relating to the environment, and environmental labelling of green products influenced the purchase intention and were moderated by demographic factors of education and gender. They also observed in their study that a higher price did not have a major role in this relationship of the determinants of purchase intention of green products.

Meyer, A (2001) noted that a number of the research literature focuses on translating the consumer's environmental concern into desired consumer behaviour, however consumers are likely to compare the cost and the overall benefits of a green product with the products of competitors. According to the author, many benefits other environmental benefits are also important, however they note this only complements the strategy of selling green products and is not a complete replacement of a strategy focusing on the environmental aspects.

Chen and Chai. (2010). analysed the differences of attitude towards the environmentally friendly green products with gender, and found no significant variation. They also studied the overall relation of attitude towards these green products with factors related to attitudes concerning the environment. They found that among these factors their attitudes were influenced most significantly by their own personal conviction along with their attitude towards the role of the government.

Polonsky et al (2010) analysed a large number of research literature in an attempt to explain the role of both general and carbon-related environmental knowledge of consumers on both their attitude and behaviour and found this to be a positive relationship.

Yadav and Pathak (2016) studied green products with reference to the young consumers in India. They noted that concern for the environment was found to be a major influence similar to developed nations. Environmental knowledge was important as a factor to influence purchase decision for green products, but the level of such knowledge was low highlighting the importance of instilling greater awareness in a developing nation. In addition, other factors such as attitude corresponding to the Theory of Planned Behaviour towards green products were also found to be significant influence towards the purchase of green products by the youth.

Jaiswal and Singh(2018) analysed the factors influencing green consumer behaviour in India and noted that initial purchase intention and subsequent purchase of green products is influenced by the general attitude towards green products, the consumer's concern for the environment, and their self-belief that they can act to help improve the environment.

Amoah and Addoah(2020) studied the case of a developing country through a survey and noted that environment-related knowledge helps to encourage more environmental-friendly behaviour and noted efforts such as campaigns that are focused on increasing environmental awareness in schools may be highly effective to promote the upcoming generations to be more responsible towards the environment.

Joshi and Rahman (2015) conducted an extensive review of various literature on the multitude of factors that influence purchases of green products including the factors of environmental concern and environmental knowledge. They noted that a large amount of existing literature suggests that environmental concern is a highly important element that influences green purchase, however they noted the inconsistency of the relationship of green knowledge with green purchases. A large amount of research stresses the importance of the role of environmental knowledge and its relationship with green purchase behaviour, but they noted some researchers have found a weak relationship of the same.

#### 3. Research Methodology:

The objective of this research is to analyse the perception of consumers towards environmentally-friendly products in terms of their perceived outlook over concern over the natural environment, perceived knowledge of environmental issues and impacts, and the connection of these with the decision to consider and purchase green products.

The focus is on an exploratory study of the relationship of the perceived environmental concern and environmental knowledge towards influencing the purchase intention towards environmentally friendly products. For this research, general environmental concern refers to the perception of an individual that human activities may have a significant detrimental impact on the environment, and may lead to negative consequences if these issues are not soon addressed. Furthermore, environmental knowledge refers to the level of understating and knowledge of various environmental issues and impacts, their causes, and ways to address them, as perceived by the respective individual.

As indicated by the review of literature, both environmental concern and environmental knowledge may have an influence on the behaviour of people in numerous ways. It is hypothesized that environmental concern and environmental knowledge may positively influence the intention of a person as a consumer towards the purchase of environmentally friendly products. For this research, purchase intention refers to the intention that a person is willing to consider the purchase of a product that is environmentally-friendly.

Furthermore, it is possible that environmental knowledge may also have an impact on environmental concern, as the obtaining of relevant knowledge may increase awareness and understanding, which subsequently will increase a person's concern for the environment. Hence, hypothesized is the relationship that environmental knowledge also positively influences environmental concern.

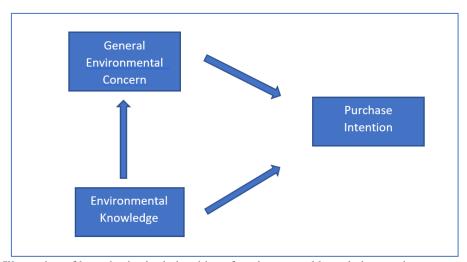
For this, a structured questionnaire having various statements along with a 5-point Likert scale, that stated 1 as "strongly disagree" and 5 as "strongly agree" was used to assess the consumer's perception of the various aspects. The first part of the questionnaire was focused on the basic demographic details of respondents and the subsequent parts on their various views relating to their environmental concern, environmental knowledge, and general views and perceptions related to green products.

A pilot study was first conducted with 30 respondents to appraise the questionnaire to ensure the clarity of understanding of statements of various items, ease of entering data in the online questionnaire form, etc. Thereafter, the structured questionnaire was sent to 150 respondents through various online modes and was subsequently answered completely by 111 respondents.

The sample of respondents was identified through both convenience and snowball sampling techniques and the questionnaire was distributed as an online form in the period during December 2020 to March 2021. The respondents surveyed were located in various major urban metropolitan cities of India.

#### Hypothesised Relationship:

The following figure shows the hypothesized relationships that are investigated by this research-



**Figure 1:** Illustration of hypothesised relationships of environmental knowledge, environment concern, and purchase intention of a person (**Source:** By the Author)

The hypotheses for this study are:

H1: Environmental concern positively influences purchase intention.

H2: Environmental knowledge positively influences purchase intention.

H3: Environmental knowledge positively influences environmental concern.

The objective of this research is exploratory in its orientation to analyse the relationships of environmental concern, environmental knowledge and purchase intention and hence Partial Least Square (PLS)-Structural Equation Modelling (SEM) has been used for this purpose.

PLS-SEM is considered to be a suitable method for researches that are exploratory and have less theory available. (Hair, Matthews, Matthews, and Sarstedt, 2017) The software used for PLS-SEM is SmartPLS 3.(Ringle, Wende, & Becker, 2015)

# 4. Findings

# 4.1 Demographics Statistics

# 4.1.1 Gender of Respondents

**TABLE 1: Gender of Respondents** 

Gender	Number of Respondents	Percentage
Male	46	41.14%
Female	65	58.6%

**Source:** Primary Survey

# 4.1.2 Age Group of Respondents

**TABLE 2: Age Group of Respondents** 

Age Group	Number of Respondents	Percentage
18 years to 30 years	45	40.5%
30 years to 50 years	41	36.8
50 years and above	25	22.5%

**Source:** Primary Survey

# 4.2 General Perception and Views of Respondents

# 4.2.1 Perceived sources of environment concern and knowledge

TABLE 3: Perceived Sources of Environmental Concern and Knowledge of Respondents

Perceived Source of Knowledge and	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Concern of					
Environment					
Views developed by	0%	0%	8%	84%	8%
own understanding					
Beliefs of peer	0%	24%	51%	25%	0
group					
General societal	17%	33%	39%	11%	0
views					
Note: All figures rounded to the nearest whole number					

**Source:** Primary Survey

The majority of respondents stated they relied on their own understanding to develop their views related to environment and green products and relatively lesser also relied on the views of their peer group. In contrast, only a very few people stated to rely on the general societal views towards the same.

# 4.2.2 Views on marketing claims

**Table 4: Trust towards marketing claims** 

Table 4. Trust towards marketing claims					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Trust the marketing green-claims with regards to green products	28%	52%	4%	16%	0%
Note: All figures rounded to the nearest whole number					

Source: Primary Survey

It has been observed that the majority of the respondents had distrust towards environmental-friendly claims about green products.

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# 4.3 PLS-SME Measurement and Structural Model

The PLS-SME includes two separate stages and involves first assessing the various measures that measure the respective construct (Measurement Model), to ensure they appropriately represent the construct and then followed by evaluating the relationships between the latent variables itself (Structural Model). (Hair, Ringle & Sarstedt, 2011; Henseler, 2017)

Firstly, the PLS-SME measurement model is to be appraised and this includes checking indicator loadings for reliability along with evaluating the internal consistency reliability, convergent validity, and discriminant validity. (Hair, Risher, Sarstedt & Ringle, 2019)

**TABLE 1 Measurement Model** 

Construct	Measures	Outer Loadings	Composite	Average Variance
			Reliability	Extracted (AVE)
Environmental	EC1	0.882		
Concern	EC2	0.779		
	EC3	0.727	0.888	0.615
	EC4	0.727		
	EC5	0.795		
Environmental	EK1	0.709		
Knowledge	EK2	0.799		
	EK3	0.810	0.853	0.539
	EK4	0.724		
	EK5	0.613		
Purchase	PI1	0.947	0.944	0.894
Intention	PI2	0.944		

**Source:** Calculated by the author

On comparing the various determined measures to the respective suggested benchmarks as given by Hair et al (2011) for PLS-SEM it was found all measures, as shown in Table 1, meet the threshold recommended for composite reliability being greater than 0.7, indicating internal consistency reliability, along with the AVE greater than 0.5, indicating the convergent validity.

In addition, all measures except EK5 meet the condition of a loading greater than 0.7, nevertheless, EK5 can also be retained as it meets the suggested criteria of Hair et al(2011) that recommends that for a loading lesser than 0.7, but greater than 0.4 need not be eliminated unless its elimination was needed to increase the related composite reliability over the suggested benchmark, which is not required in this case. This indicates the indicator reliability of the measurement model.

Furthermore, the Discriminant Validity, as measured by the HTMT, is shown in Table 2. The values are satisfactory as they are lesser than the value of 0.85 as recommended by Henseler(2017).

**TABLE 2 Discriminant Validity (HTMT)** 

	Environment	Environment	
	Concern	Knowledge	
Environment	0.533		
Knowledge			
Purchase	0.604	0.448	
Intention			

**Source:** Calculated by the author

Therefore, the measurement model is satisfactory.

Subsequently, for PLS-SEM it has been stated by Hair et al (2019) to check for collinearity, and then if it poses no problem then evaluating the structural model by assessing the R square, Q square, and bootstrapping for significance. (Hair et al, 2019)

For evaluating in terms of collinearity, the Variance Inflation Factor (VIF) is assessed. All of the VIF values are below 3 which are ideal values as recommended by Hair et al (2019) and this indicates that there are no issues of collinearity.

**TABLE 2 Collinearity Statistics (VIF)** 

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Measure	VIF			
EC1	2.834			

EC2	1.963
EC3	1.759
EC4	1.780
EC5	1.790
EK1	1.736
EK2	2.388
EK3	2.182
EK4	1.404
EK5	1.287
PI1	2.632
PI2	2.632

**Source:** Calculated by the author

Henceforth, a bias-corrected and accelerated(bca) bootstrap was done using 5000 subsamples.

**TABLE 3 Hypothesis Testing** 

TABLE 5 Hypothesis Testing				
Hypothesis	Path of Hypothesis	Path Coefficient	t-value	p-value
H1	Environment	0.456	4.361	0.000
	Concern → Purchase			
	Intention			
H2	Environment	0.166	1.623	0.105
	Knowledge →			
	Purchase Intention			
Н3	Environment	0.454	3.959	0.000
	Knowledge →			
	Environment			
	Concern			

Source: Calculated by the author

The hypothesis H1 depicting the positive influence of environmental concern on purchase intention of green products is found to be statistically significant. In contrast, hypothesis H2 relating to the positive influence of environmental knowledge on purchase intention of green products for consumers was not found to be statistically significant.

However, H3 the hypothesis of environmental knowledge influencing environmental concern was supported and found statistically significant.

In addition, the R square values were also determined for the endogenous latent variables environmental concern and purchase intention respectively, and are found to be above 0.2. This level of value is low but is a value usually considered high in terms of research related to consumer behaviour according to Hair et al (2011). It is indicative that environmental knowledge can explain some aspects of environmental concern of a consumer and similarly the overall relationship of environmental concern and environmental knowledge can explain some aspects of the purchase intention of consumers.

The Q square has also been calculated using the blindfolding procedure with omission distance 10, and the values are greater than 0 for both endogenous latent variables. This indicates the relevance of prediction of the exogenous constructs on the respective endogenous constructs as all the values are greater than 0 as suggested by Hair et al (2011).

Table 4 R Square and Q Square

Construct	$\mathbb{R}^2$	$Q^2$
Environmental Concern	0.206	0.111
Purchase Intention	0.305	0.240

Source: Calculated by the author

## 5. Discussions:

The findings show an indication that purchase intention of green products is influenced by environmental concern. However, as indicated by the findings, environmental knowledge was not found to have a statistically significant direct influence on purchase intention for green products. Nevertheless, it was found that environmental knowledge helps positively influence environmental concern and indirectly plays a role in fostering a purchase intention of green products.

The positive influence of environmental knowledge on environmental concern also corroborates with a similar finding of Jaiswal and Singh (2018) in the context of the country India. Furthermore, in general, as noted by

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Wang, Ma, and Bai (2019) the indication of a direct influence of environmental knowledge on purchase intention has been conflicting in numerous researches and this may imply that this relationship is more complex. Joshi and Rahman (2015) also noted in the regard of a weak relationship of environmental knowledge and green purchase behaviour of some researches and suggested that this could imply that just fundamental and rudimentary environmental knowledge of people may not be a large influence to encourage people in purchasing green products and having more detailed and in-depth environmental knowledge and understanding of the same may be needed for this particular relationship to be significant.

An important implication of the relationship between environmental knowledge and concern and thereafter purchase intention of green products is that in addition to increasing knowledge of people in areas related to the natural environment and environmental issues there is also a need to ensure to simultaneously encourage a person to develop empathy and concern for the natural environment as this can encourage people to develop an intention to attempt to purchase environmentally friendly products. In addition, general measures to build people's concern for the degradation of the environment and various other environmental problems can also assist to help in this endeavour to promote the use of environmentally friendly products.

Furthermore, as indicated by the survey of various respondents the general perception towards marketing claims related to environment and general social views is mostly of mistrust and conversely, an emphasis is needed to enhance the own-understating of people towards environmental issues along with encouraging the use of peer communication to disseminate relevant information.

An appropriate effective strategy of communication of information related to environmental knowledge and concern needs to be developed considering this aspect in programs developed to promote green consumerism and encourage more people to seek green products. Such as with relation to the promotion of green products the inclusion of communication-related to the general concern and knowledge of the environmental issue that a particular green product addresses along with relevant explanations to aid understanding of the same may be beneficial along with incentives, such as to make appropriate social media posts on personal accounts, so that people promote the awareness of both environmental knowledge and concern along with a green product among their peers.

# 6. Conclusion:

Environmental concern has been found to positively influence the purchase intention of consumers to purchase green products. In contrast, environmental knowledge was not directly found to influence the purchase intention of green products, nevertheless, it had an indirect influence by positively influencing environmental concern. The implication of this is that efforts to build environmental concern through awareness, environmental education campaigns, etc. can help motivate consumers to consider the purchase of environmentally-friendly products. In addition, the survey of various respondents indicated that many people prefer to develop a self-understanding of various environmental issues and green products and a few to some extent are also influenced by the views of their peers towards environmentally-friendly products.

The inference from this finding is that the strategy developed to build or enhance environmental knowledge and environmental concern for a large number of people to promote the consideration of the purchase of environmentally-friendly products should consider these aspects to increase its potential efficiency. This has an implication for businesses and marketers developing green marketing strategies and also governments, public interest groups, etc. in making programs to encourage and promote environment-friendly products by awareness and knowledge building campaigns etc.

There is a scope for further research to analyse the various aspects of the relationship of environmental knowledge and purchase intention of green products, to explain this relationship, especially given the inconsistency of the nature of this relationship as noted by some researchers. Further research can also expand the studied relationship by considering the relationship of purchase intention with the actual purchase of environmentally friendly products. Furthermore, this study was focused only on some major urban cities of India and further research can be expanded to other areas, including semi-urban and rural to add further to the body of knowledge.

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