Environmental Awareness and Behaviour of People in Northern India: A Comparative Study

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Abstract

Due to the extensive exploitation of the environment by the people, the environment has deteriorated to an alarming extent. People specifically have started looking upon the environment friendly products on the shelves of supermarkets. The paper attempts to draw the types of environmental awareness and behaviour specifically related to the environment friendly products. The present paper will help in having understanding of the environmental awareness and behaviour in various areas. People have more awareness regarding environment friendly products and least about the solutions provided by environment friendly products. People have started becoming sensitive towards environmental issues and this is seen in their behaviour, people now indulge in buying more environment friendly products and in this way they try to shun the guilt of doing nothing for the environment.

1. Introduction

Natural resources have been exploited arbitrarily by human race in the past. As a result the balance of nature has been disturbed. The implications of damage to the environment have proved to be deadly. The governments, companies and customers sooner or later started addressing this issue. The awareness and efforts are on, in protecting the local environment in many countries.

The consumer organisations and consumers are the driving force behind the growing concern for environment. Consumer demand encourages improvements in the environmental performance of many products and companies. However there is other side of coin as many consumers are not much aware about the environment and lack knowledge about environmental issues. However, at the same time, they are eager to learn and grab more information about environment and its conservation. People at large have now started showing sensitivity for environmental issues.

2. Review of literature

Environment and related issues started dominating the research arena during 1970s, however the focus was ecology and energy conservation (Kinnear,Taylor and Ahmed 1974; Koenig 1975). In 1980s the focus became the pollution especially air pollution (Aaker and Bagozzi 1982). Green marketing related issues were being research in 1990s and afterwards.

The researchers have shown that different levels of environmental awareness exist among people belonging to different areas. However, it is seen that this awareness is high in western countries like Germany (Scherhorn 1993). Moderate level of awareness is seen countries belonging to third world (Ziadat 2010). This study highlighted that the people in third world countries have other important priorities in their daily lives to deem than environment. Consumer Unity and Trust Society (CUTS) in 1997 found the awareness of the Indian ecomark scheme exists merely amongst 30% of sample respondents.

Moreover, Jain and Kaur (2004) revealed that people believe in genuineness of sudden rise in environmental concern. Respondents had uneven knowledge about various environmental issues, developments and legislations. They also reported that respondents had been influenced by green communication campaigns and people exhibited willingness to take environment friendly actions, seek environment related information and pursue activities that conserve the environment and prevent pollution.

Das and Nath (2003) conducted a study in Delhi regarding the environmental efforts made by fast food industry. The study revealed that while 77% of the consumers were aware of the ingredients of the product, 62% of them didn't consider any impact the product is going to have on the environment.

Environmental behaviour is another aspect that has been investigated a lot by researchers. Various dimensions of ecologically responsible consumption patterns including home insulation, energy

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curtailment, ecologically responsible buying and using of products, environmental concern and ecologically responsible use of cars were investigated by Balderjahn (1988). Hopper and Nielsen (1991) confirmed that recycling behaviour is influenced by social norms, personal norms and awareness of consequences. Results also showed that prompting and information increased recycling behaviour. People have started showing interest in new products, exchanging product information, careful shopping habits and became information seekers (Shrum, McCarthy and Lowrey 1995). Roberts (1996) studied the ecologically conscious consumer behaviour (ECCB) and reported that the more people believe they can help make a change, the more they are likely to perform ECCBs. Muzaffer and Emine (2005) carried consumer classification analysis based on behaviour toward the environment and delineated each segment in terms of attitudes, demographics, socioeconomics and leisure activity. Positive attitudes towards growth and technology, efficacy of personal pro-environmental behaviour and emotional sensitivity were found to be significantly related to environmentally responsible behaviour (Iwata 2004). Nabsiah, Elham and Tan (2011) found that social influence, environmental concern, green product knowledge, specific environmental knowledge, environmental label and income level have significant impact on green purchase behaviour.

3. Rationale of the study and objectives

Due to the extensive exploitation of the environment by the people, the environment has deteriorated to an alarming extent. The companies and consumers have started taking steps to improve upon the condition of environment. People specifically have started looking upon the environment friendly products on the shelves of supermarkets. This is indeed, one of the ways through which people can contribute their share towards the betterment of the environment. With so much changes happening it becomes imperative for the researcher to study what kind of environmental awareness and behaviour is being shown by the people.

The paper attempts to draw the types of environmental awareness and behaviour specifically related to the environment friendly products. Further compare the awareness and behaviour on the basis of area. The present paper will help in having understanding of the environmental awareness and behaviour in various areas which will ultimately help the marketers to manufacture and promote their products accordingly.

To be particular, the objectives are:

a) To outline the types of environmental awareness for environment friendly products.
b) To summarize the types of environmental behaviour regarding environment friendly products.
c) To compare the awareness and behaviour regarding environment friendly products for various areas.

4. Methodology

To achieve the objectives stated above a structured questionnaire was developed. 13 and 14 statements of awareness and behaviour respectively were used to carry out pilot survey. After the item analysis 9 statements of awareness and 10 statements of behaviour were retained. Likert type 5 point scales ranging from strongly disagree to strongly agree was used. The respondents were then given this self administered questionnaire to provide the responses. In order to achieve the objectives 100 respondents each were selected from Delhi, Chandigarh, Haryana and Punjab. In total 400 respondents were included in the study. Sincere efforts were made by the researcher to keep the selection of respondents objective.

5. Data Analysis, Interpretation and Discussion

The respondents included in the study were asked to respond on environmental awareness and behaviour related construct. The responses were then coded and tabulated. Factor Analysis was applied in order to reduce the items. To compare the awareness and behaviour on the basis of area, one way ANOVA was applied. To have a better and clear comparison Post Hoc test was further applied.

Environmental awareness

To come up with various dimensions of environmental awareness specifically for environment friendly products, factor analysis was done. Principal Component Analysis with Kaiser Normalization has been used as a method for obtaining the initial factors. Kaiser-Meyer-Olkin Measure of Sampling Adequacy test was applied initially; the value came out to be 0.588 thereby hinting that the data is adequate. The value for Bartlett's Test of Sphericity came out to be 275.52 at 0.000 significant levels.

A total of four factors were extracted from rotation matrix out of nine original variables. These four extracted factors together account for 60.52 per cent of cumulative variance. Thus the six extracted factors are able to retain approximately 60 per cent information. The nomenclatures of factors were done on the bases of nature of the variables constituting factors.

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Table: 1. Factor Analysis of environmental awareness and behaviour

	Factor	Constructs	Communalities	Factor Loadings	Cumulative % of Variance	Mean Value	Mean Rank
Awareness	Product related awareness	I know the environment friendly way to use a product so that its impact on nature can be minimised.	.727	.790	21.74	3.844	1
		I want to increase my knowledge about environment friendly products.	.454	.623			
		I have seen Ecomark or any third party logo on various products.	.575	.538			
	Manufacturing process related awareness	Environment friendly products do not consume a disproportionate amount of energy or other resources during its manufacture.	.664	.794	37.48	3.611	3
		Raw materials of environment friendly products do not cause unnecessary cruelty to animals during the making.	.613	.770			
	Company response related awareness	Companies have started making environment friendly products to lure the consumers.	.620	.755	49.22	3.631	2
		Manufacturers are aware that environmental claims influence the buying behaviour of consumers.	.590	.693			
		The market is driving the companies to go for environment friendly products.	.459	.545			
	Solution related awareness	Environment friendly products help in solving several problems of environment.	.746	.850	60.52	3.513	4
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy: .588						
	Bartlett's Test of Sphericity; Chi Square: 275.52*						
Behaviour	Product disposal related behaviour	I recycle the packaging of the products that I buy.	.640	.754	35.697	3.299	2
		I pay attention to the method for disposal of the product informed on the package of the product.	.449	.636			
		I prefer buying products with environment friendly packaging.	.480	.632			
		I recycle the unused products at home.	.527	.606			
	Information seeking behaviour	I go out to look for environment friendly products.	.619	.776	46.549	3.178	3
		I pay attention to advertisement that ensured the positive effect of product on environment.	.580	.698			
		I read information regarding raw materials used before buying a product.	.522	.511			
	Environment friendly products buying behaviour	I buy environment friendly products to do my bit for environment.	.687	.824	56.683	3.404	1
		I buy only those products that have natural ingredients and no chemicals.	.638	.571			
		I do not buy products of the companies that degrade environment by their manufacturing and production process.	.526	.544			

Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.851
Bartlett's Test of Sphericity; Chi Square: 857.022*

Note: * significant at 0.01 level
Source: Field Survey

The four factors were named as product related awareness, manufacturing process related awareness, company response related awareness and solution related awareness (Table 1).

The table 1 highlights the factor analysis for awareness. The most contributing factor came out to be product related awareness as the cumulative percentage of variance is highest (27.14). The factor comprise of three statements namely I know the environment friendly way to use a product so that its impact on nature can be minimised; I want to increase my knowledge about environment friendly products; and I have seen Ecomark or any third party logo on various products. The mean value for product related awareness is 3.844 which come out to be the highest. The respondents have the product related awareness highest among themselves as the mean rank is 1. Hence people are more aware about product related aspects when it comes to environment friendly products.

Manufacturing process related awareness is the second factor that is extracted through data reduction technique. The items included are, environment friendly products do not consume a disproportionate amount of energy or other resources during its manufacture; and raw materials of environment friendly products do not cause unnecessary cruelty to animals during the making. The mean value for this factor comes out to be 3.611. The mean rank is 3.

The third factor came to be company response related awareness which included, companies have started making environment friendly products to lure the consumers; manufacturers are aware that environmental claims influence the buying behaviour of consumers; and the market is driving the companies to go for environment friendly products. The mean value is 3.631; and mean rank is 2. This factor signifies that people are aware of the fact that companies are now in reactive mode and hence have started making environment friendly products because the people have started demanding such products.

Solution related awareness is the last factor for awareness. The mean rank comes out to be 4 and the mean value is 3.513. It included environment friendly products help in solving several problems of environment. People have shown least awareness for this factor. Environment friendly products are relative in nature. Their impact can only be minimized. Other thing is that it is difficult to directly see the negative impact of any product on environment. Hence the awareness is comparatively low.

As far as the environmental behaviour regarding environment friendly products is concerned the value for Kaiser-Meyer-Olkin Measure of Sampling Adequacy test is 0.851 which means data is adequate. The value for Bartlett's Test of Sphericity is 857.022 at 0.000 significant levels. The statements were reduced to three factors viz. product disposal related behaviour, information seeking behaviour and green products buying behaviour.

Out of the three types of behaviour shown by people, the most prominent is green products buying behaviour as the mean rank is 1 and mean value is 3.404. This consisted of, I buy environment friendly products to do my bit for environment; I buy only those products that have natural ingredients and no chemicals; and I do not buy products of the companies that degrade environment by their manufacturing and production process. It means that people indulge in buying of green/ environment friendly products. They feel that by buying green/environment friendly products they can contribute towards environmental conservation.

Product disposal related behaviour is the other behaviour as shown by the people. This factor comprised, I recycle the packaging of the products that I buy; I pay attention to the method for disposal of the product informed on the package of the product; I prefer buying products with environment friendly packaging; and I recycle the unused products at home. The mean value is 3.299 whereas the mean rank is 2. It is concluded that after the green products buying behaviour people go for the right way of disposing a product or its packing material. It is seen that incorrect way of disposing a product or its packing material can lead to environmental degradation.

The next type of behaviour that came out as a result of factor analysis is, information seeking behavior (mean value 3.178; rank 3) . I go out to look for environment friendly products; I pay attention to advertisement that ensured the positive effect of product on environment; and I read information regarding raw materials used before buying a product, included in this factor. It is seen that in order to contribute towards conservation of environment, people have started sensitizing themselves towards environmental issues. People now look for various types of information related to environment friendly products. However this behaviour is less than the other environmental behaviour.

Area wise comparison of environmental awareness and behaviour

With the objective of having better understanding of the differences among people residing in four different areas i.e. Delhi, Chandigarh, Haryana and Punjab for awareness and behaviour, one way ANOVA (Table 2) is applied. Further, post hoc test is applied to have a better picture of differences among various areas.

Environmental awareness

For the first factor product related awareness, the F value is 14.044 which is significant at 0.01 level. The mean values for Delhi, Chandigarh, Haryana and Punjab are 4.000, 4.060, 3.710 and 3.607 respectively. Post Hoc test shows that when comparing the product awareness for Delhi (mean 4.000) and Haryana (mean 3.710), the mean difference (0.29) is found to be significant at 0.01 levels. The people living in Delhi are found to be more aware for environmental product as compared to people in Haryana. Delhi being a metro, people have more exposure to environmental problems more as compared to Haryana. Thus Delhites have more information related to environment friendly products.

Taking into consideration, Delhi and Punjab, the mean difference 0.39 is significant at 0.01 levels. Hence people living in Delhi are more aware for environmental products than people in Punjab.

While comparing Chandigarh with Haryana and Punjab, the mean differences 0.35 and 0.45 respectively are significant at 0.01 level. Thus, people in Chandigarh have more product awareness with their counterparts in Haryana and Punjab. The reason could be the same. As the people in Chandigarh are residing in big city they have more information and experience regarding the environmental issues. However for other combinations of areas the mean difference for product related awareness is found to be insignificant. When comparing Delhi with Chandigarh or Punjab with Haryana, the mean difference is insignificant.

For manufacturing process related awareness, F value (6.442) significant at 0.01 level is found. The mean values for Delhi, Chandigarh, Haryana and Punjab are 3.455, 3.410, 3.850 and 3.730 respectively. A deep analysis shows that the mean difference for Delhi and Haryana is 0.39 which is significant at 0.01 levels. Thus people in Delhi are more aware for the manufacturing related process than the people in Haryana. Similarly the people of Chandigarh found to be more aware as compared to Haryana and Punjab, as their mean difference is 0.44 (significant at 0.01) and 0.32 (significant at 0.05 level) respectively.

The comparative analysis for reactive forces related awareness was found to be non significant as the F value is insignificant.

Table: 2. ANOVA and Post Hoc analysis for environmental awareness and behaviour

	Factors	Area	Mean	F Value	Area (I)-Area(J)	Mean Difference (I-J)
Awareness	Product related awareness	Delhi	4.000	14.044*	Delhi-Haryana	0.29*
		Chandigarh	4.060		Delhi-Punjab	0.39*
		Haryana	3.710		Chandigarh-Haryana	0.35*
		Punjab	3.607		Chandigarh-Punjab	0.45*
	Manufacturing process related awareness	Delhi	3.455	6.442*	Delhi-Haryana	0.39*
		Chandigarh	3.410		Chandigarh-Haryana	0.44*
		Haryana	3.850		Chandigarh-Punjab	0.32**
		Punjab	3.730			
	Reactive forces related awareness	Delhi	3.670	2.281	Non Significant	
		Chandigarh	3.750			
		Haryana	3.547			
		Punjab	3.557			
	Solution related awareness	Delhi	3.660	8.956*	Delhi-Haryana	0.51*
		Chandigarh	3.730		Chandigarh-Haryana	0.58*
		Haryana	3.150			

		Punjab	3.510			
Behaviour	Product disposal behavior	Delhi	3.403	19.918*	Delhi-Punjab	0.32*
		Chandigarh	3.535		Chandigarh-Haryana	0.35*
		Haryana	3.183		Chandigarh-Punjab	0.45*
		Punjab	3.078			
	Information seeking behavior	Delhi	3.330	3.077**	Delhi-Haryana	0.36*
		Chandigarh	3.597		Delhi-Punjab	0.50*
		Haryana	2.963		Chandigarh-Haryana	0.63*
		Punjab	2.823		Chandigarh-Punjab	0.77*
	Green products buying behavior	Delhi	3.450	6.650*	Chandigarh-Haryana	0.25**
		Chandigarh	3.540			
		Haryana	3.290			
		Punjab	3.337			

Note: * significant at 0.01 level,
      ** significant at 0.05 level

Taking into consideration, the solution related awareness; the F value is 8.956, significant at 0.01 levels. Significant mean differences are found between Haryana and Delhi; and Haryana and Chandigarh. The mean difference for Delhi-Haryana and Chandigarh- Haryana are 0.51 and 0.58 respectively, both are significant at 0.01 level. The mean values for Delhi, Chandigarh, Haryana and Punjab are 3.660, 3.730, 3.150 and 3.510 respectively. The results confirm that the people in Haryana are found to have least awareness as compared to Delhi and Chandigarh.

Environmental behaviour

The F value for the three factors extracted i.e. product disposal behaviour (F=19.918), information seeking behaviour (F=3.077) and green product buying behaviour (F=6.650) are found to be significant at 0.01 level.

For the product disposal behaviour the mean values for Delhi, Chandigarh, Haryana and Punjab are 3.403, 3.535, 3.183 and 3.078. Post Hoc analysis shows people in Delhi indulge in more product disposal behaviour as compared to people in Punjab (mean difference 0.32, P < 0.01). Chandigarh has also shown high product disposal behaviour as compared to Haryana (mean difference 0.35) and Punjab (mean difference 0.45). Both are significant at 0.01 levels.

The mean values in Delhi, Chandigarh, Haryana and Punjab for information seeking behaviour are 3.330, 3.957, 2.963 and 2.823 respectively. People in Delhi are found to be having more information seeking behaviour than Haryana and Punjab. Their

mean differences are 0.36 and 0.50 respectively. Both are significant at 0.01 level. The people in Chandigarh are also found to have more information seeking behaviour than their Haryana and Punjab counterparts. The mean differences 0.63 and 0.77 respectively are significant at 0.01 level. It can be concluded that people in Delhi and Chandigarh when compared to people in Haryana and Punjab are more sensitive towards information related to environmental issues and go for looking such information.

As far as the buying of green or environment friendly products are concerned the F value is 6.650 which is significant at 0.01 level. The mean values are 3.450, 3.540, 3.290 and 3.337 for Delhi, Chandigarh, Haryana and Punjab respectively. The mean difference for one combination of area is found significant that too at 0.05 level. The people in Chandigarh go for buying more green product as compared to people in Haryana. The mean difference is 0.25 significant at 0.05 level.

6. Conclusion

The present paper is an attempt to highlight the environmental awareness and behaviour in relation to environment friendly products. The study has come out with product related awareness, company response related awareness, manufacturing response related awareness and solution related awareness in order of merit. People have more awareness regarding environment friendly products and least about the solutions provided by environment friendly products.

People have started becoming sensitive towards environmental issues and this is seen in their behaviour, people now indulge in buying more environment friendly products and in this way they try to shun the guilt of doing nothing for the environment. It means that if people directly participate in environment conservation activities, indirectly by buying environment friendly products they contribute for environment. People now dispose the product/ packaging in a manner that is not environment unfriendly. The other type of behaviour shown by people is information seeking behaviour. People deliberately look for environment related news so that they can keep themselves environmentally updated.

Considering various areas, Delhi, Chandigarh, Haryana and Punjab different levels of awareness and

behaviour are found. For product related awareness, manufacturing response related awareness and solution related awareness differences are found in Delhi and Haryana. For these three environmental awareness Chandigarh has shown significantly higher levels of awareness than Haryana and Punjab. When comparing Delhi with Punjab different level of awareness is found only for product related awareness.

Different levels of behaviour are found for all the three behaviours for Chandigarh and Haryana. Similar behaviour is found while buying green products in Chandigarh and Punjab. Different behaviours are found for product disposal behaviour and information seeking behaviour.

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