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Profiling Environmentally Concerned Consumers in India : An Empirical Analysis

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Abstract

Objectives/Purpose : Today in response to environment problems, pro-environmental concern of common individual is of immense significance. This paper is an initiative in determining socio-demographic and psychological characteristics of environmentally concerned consumers.

Approach/Methodology : A cross-tab analysis along with Chi-square test of independence or association is applied by using the statistics Cramer's V to measure the degree of association. Furthermore, profile of concerned consumers is obtained using proportional analysis.

Major Findings : The findings suggest that the psychological variables according to which environmental concerns significantly progress include: littering concern, pollution concern, perceived consumer effectiveness against pollution, and civic sense. The significant socio-demographic variables identified comprise: age, education, academic orientation and economic status.

Key Conclusion : Females, elders, rural residents, better educated, academic achievers, business academics, the occupational class, respondents from large-sized and high status families, with high civic sense, littering concern, pollution concern and those who perceive that their own efforts can contribute to minimize pollution problems exhibit greater levels of environmental concern than their counterparts.

Key Contribution : As India is in the process of innovative renovations with Swatchh Bharat Abhiyan and development of Smart Cities, the paper has great potential. Since the initiatives will bear fruit only when the common men will be concerned and optimistic for accepting and contributing to new transformations. Accordingly, it elaborates

about the first and foremost stakeholder for these causes: the people.

Key Words

Environmental Concern, Socio-Demographic, Psychological Variables

INTRODUCTION

It is increasingly being recognized that people's contemporary ways of life and everyday actions are over-exploiting the natural environment; and so, threatening sustainable living on the planet (Nyberg and Sto, 2000). The upheaval is taking the form of frequent and terrible storms, rising sea levels, extensive flooding, intense draughts, pollution, global warming, species extinction, land degradation, problems of safe drinking water and many others (Groe, 1995; Uzzell and Rathzel, 2008; Alibeli and Johnson, 2009; Mondejar-Jimenez *et al.*, 2011). The future scenario may be more violent if the things are not handled proactively. However, one of the silver linings is visible in the form of environmentally responsible consumers who are ready to sacrifice many of their self-interests for those choices which may be in environment's best interest (Laroche *et al.*, 2001). Literature also unveils many facts in this regard; but practically, consumers face dilemma of their own well-being when it contradicts with the welfare of environment. For instance, environmentally responsible products may be costly and involve more time in searching but the opposite alternatives may be cheaper and cost effective. As instance, driving own vehicle is more comfortable than sharing with others or using public transport; irresponsible use of energy, water and other natural resources bring no immediate pain; and unsustainable means of disposal are totally effortless instead enduring for recycling or reusing. Liegeois and Cornelissen (2006) quote similar views and remark that each choice confronts consumers with self-conflict which is defined as a choice between an easy solution that harm the environment or a sustainable substitute for which they themselves sacrifice or pay a price. Some consumers set aside their own benefits and select those options which can sustain environment or at least do not harm it. At the same time, some self-seekers pay no attention. The reason of this behavioural dissimilarity is largely attributed to superior environmental concern of consumers which when transformed into positive environmental attitude leads to favourable environmental behaviour (Mondejar-Jimenez *et al.*, 2011). Therefore, a study on environmental concern is worth of importance for research and the present paper is centered around this concept. Researchers have already tried to explore environmentally concerned consumers (Kinnear *et al.*, 1974; Schwepker and Cornwell, 1991; McMillian *et al.*, 1995; Alibeli and Johnson, 2009) but the question still remained unanswered about Indian

consumers. Keeping this backdrop, the paper moves one step further and identifies environmentally concerned consumer segments in India.

At the outset, the paper defines environmental concern and its measurement. This is followed by literature review, methodology, analysis, results and conclusions. Lastly, implications and research directions are discussed.

ENVIRONMENTAL CONCERN (EC)

Meaning of Environmental Concern

Environmental concern (EC) is a very complicated and precarious concept as defined diversely and extensively in literature (Albayrak *et al.*, 2010). It is a term used interchangeably to refer to the whole range of environmentally related perceptions, emotions, values, knowledge, attitude and behaviour (Bamberg, 2003). According to Siu and Cheung (1999), a positive attitude towards environment refers to environmental concern. Finisterra do Paco and Raposo (2008) relate this attitude with environmental consequences. Milfont and Duckitt (2004) also mention that EC is the term typically used in empirical literature to refer to EA (Environmental Attitude) which itself is a multi-faceted term and has been defined differently by academics. In line with Kalantari *et al.* (2007), EC may also represent values of respondents about the relationship between: the environment and society, individual and environment and perceptions of respondents about specific environment problems. Kim and Choi (2005) and Kim and Kim (2010) too treat EC as an individual's general orientation towards environment, his/her concern, evaluation and attitude towards facts related to environmental issues and accept that it is the degree of worry about the state and nature of environment problems. Looking beyond, along with people worry and awareness for environment, EC is also stated as the supported attempts of individuals for solving these problems and then the level of their willingness for contributing to such attempts (Alibeli and Johnson, 2009; Albayrak *et al.*, 2010). Therefore, environmental concern has been viewed as a mixed perspective with attitude and behaviour. However, Mondejar-Jimenez *et al.* (2011) defined it as a first step in formation of environmentally responsible behaviour. Whatsoever is the case, the studies have defined environmental concern as a notable determinant of environmentally responsible behaviour; so, it will be beneficial to locate environmentally concerned consumers first instead of environmentally responsible.

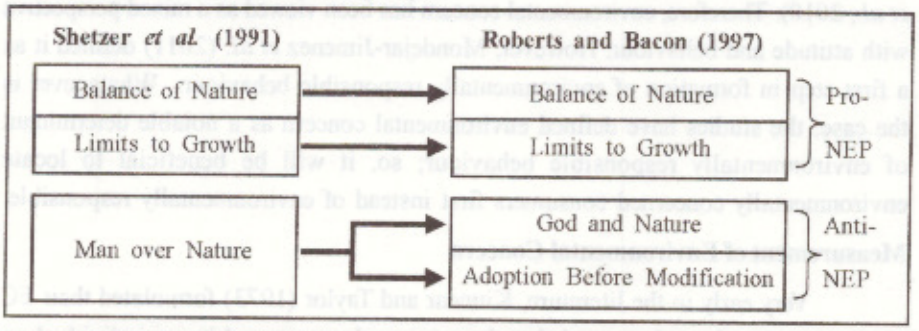
Measurement of Environmental Concern

Very early in the literature, Kinnear and Taylor (1973) formulated their EC measurement scale and stressed that the concern demonstrated by an individual on this measurement was related to behaviour via attitude. Later, Dunlap and Van Liere

(1978) developed twelve-item New Environmental Paradigm (NEP) scale to measure EC. Kaur (2006) discussed about the EC scale developed by Zimmer *et al.* (1994) which was reduced to seven dimensions in Indian context namely, concern for– waste, wildlife, biosphere, popular issues, health, energy awareness and environment technology. Above all, the scale which was most accepted and used by a number of researchers was NEP (Shetzer *et al.*, 1991; Roberts and Bacon, 1997) and was also utilized as a general measure of environmental attitude (McMillian *et al.*, 1995; Kaiser *et al.*, 1999). According to Roberts and Bacon (1997), NEP focused on the view that humans are a part of nature; there are limits to the carrying capacity of eco-systems and the ability of technological progress to solve environmental problems. A wide discussion is presented in literature about the dimensionality of the scale. Traditionally, it had been viewed as a uni-dimensional construct which measured EC ranging from unconcerned about the environment at the low end to extreme concerned at the high end (Mostafa, 2007). Later on empirical work on the scale supported it as multi-dimensional. Shetzer *et al.* (1991) found three dimensions of the scale and Roberts and Bacon (1997) set up four dimensions of it. Shetzer's *et al.* (1991) results confirmed that the scale was composed of three components as Balance of Nature, Limits to Growth and Man over Nature. When Roberts and Bacon (1997) analyzed it, four factors emerged. Two factors (Balance of Nature and Limits to Growth) were same, whereas 'Man over Nature' was bifurcated as 'God and Nature' and 'Adaption before Modification'. After these studies, Dunlap *et al.* (2000) refined the scale and a new NEP is obtained with fifteen items. Here, keeping in mind the ease and simplicity with twelve-item NEP scale, the current paper utilizes the same scale for the measurement of EC. The structure of dimensions of twelve-item NEP, as elucidated by Shetzer *et al.* (1991) and Roberts and Bacon (1997) is depicted in the Figure 1.

Figure 1

Structure of Previous NEP Components



Source : Compiled by Authors

ENVIRONMENTALLY CONCERNED CONSUMERS–A REVIEW

The search regarding environmentally concerned consumers began around 1970s when after Industrial Revolution ecological imbalance was noticed and many environmental problems became evident with 1970s energy crisis and 1980s discovery of hole in Earth's ozone layer. Today, in the wake of increasing concern for environmental sustainability, intensive research studies on environmentally concerned consumers are going on. In literature such consumers are represented by various titles such as environmentally/ecologically conscious/concerned consumers; environmentally/ecologically responsible consumers; socially responsible consumers; green consumers and sustainable consumers but the major tags among these are associated with the measurement of their responsible consumption behaviour and not with the measurement of their concern and attitude. As the paper discusses about the general environmental concern, only those studies related with consumer concern and attitude are reviewed here in which, with the measurement of consumers' environmental concern and general attitude they are tagged as environmentally concerned consumers, not with any other designation.

Environmentally concerned consumers have largely been studied with their demographic, psychological and social characteristics (Kinnear *et al.*, 1974; Samdahl and Robertson, 1989; Schwepker and Cornwell, 1991; Alibeli and Johnson, 2009). Roberts and Bacon (1997) correlated environmental concern with measures like environmentally conscious consumption behaviour. Marketing researchers related environmental concern with other traits of consumers like motivation and scepticism for segmentation purposes (Brown and Wahlers, 1998; Albayrak *et al.*, 2010). The present review, however, is limited to the studies focusing on environmental concern and diverse consumer characteristics.

Initially, Kinnear *et al.* (1974) attempted to study the relationship of environmental concern with socio-economic and personality characteristics of consumers. The results demonstrated that ecologically concerned consumers were open to new ideas, were high in perceived consumers' effectiveness against pollution, in need to obtain personal safety, in curiosity to understand the working of things: particularly, those who had satisfied their intellectual curiosity. Later, Samdahl and Robertson (1989) concentrated on socio-demographic factors and political liberalism as determinants of environmental concern. They indicated that socio-demographic variables were not much effective in explaining environmental concern but pro-regulatory liberal ideology of individuals' was a strong predictor of their support for environmental regulation. Thereafter, Schwepker and Cornwell (1991) again tested socio-demographic and psychological variables as discriminators of

environmentally concerned consumers by employing a sample from the United States. As specified by psychological features, the individuals with internal locus of control, concerned about litter, believed in pollution problems and had auspicious attitude towards ecologically conscious living were environmentally concerned. Among socio-demographic factors, they established race and income as significant determinants and all other demographic variables were found insignificant in their discriminating power. Thus, they concluded that socio-demographic variables were not as important as socio-psychological in understanding environmentally concerned consumers. Hence, their result strongly affirmed Samdahl and Robertson (1989) for the similar finding. Followed by this, Newell and Green (1997) published their research describing about racial differences in consumer environmental concern. They stated that although as a group African-American consumers were established having less environmental concern but as dissimilar segments they differ from each other. The differences existed with regard to lower levels of education and income while at higher levels of education and income both groups display similar concern for the environment. Thus, increased level of education and income were found as greater equalizer of consumers' concern regarding environment.

Several recent studies also operated on some novel variables. By introducing a new variable that is commuting, Walton *et al.* (2004) investigated commuters' concern for environment. The public transport commuters and personal vehicle commuters were the sample respondents. They obtained no significant difference across commuters' type and their concern for environment. Thus, the concern among public transport commuters and private vehicle commuters was interpreted as the same and it was also obtained as same for smoky vehicle drivers and other vehicle commuters. In addition, Alibeli and Johnson (2009) analyzed environmental concern among sample of college students in Bahrain, Jordon, Qatar and Saudi Arabia (BJQS). On their measure of environmental concern, they obtained three factors with factor analysis: 'coexist with nature', 'master nature' and 'environmental efficacy'. The results corroborated that among these three factors, respondents strongly supported the idea of 'coexisting with nature', revealed moderate support for 'environmental efficacy' and low support for 'master nature' factor. The environmentally concerned consumers were inferred as women and the middle class who supported the notion of 'coexisting with nature' more than their counterparts. Recently, Fairbrother (2012) following some previous studies observed that generally wealthy people were established as more concerned about the state of natural environment than their correspondents. Questioning this view, he confirmed no relationship over time between economic development and people willingness for environment protection within countries. In his words, richer people might be

slightly high for the same but the results could differ on distinct dimensions and this required further research.

This way, there is an ongoing research on the topic and numerous authors have enriched the field with their findings. Decades ago, Kinnear and colleagues (1974) and freshly Fairbrother (2012) both tried to find out environmentally concerned consumers but none of the above examinations relate to developing countries like India to obtain a view of these consumers here. As an attempt to fill this gap, this study is an initiative on Indian consumers. Its' succeeding two sections deal with study purpose and methodology.

PURPOSE AND OBJECTIVES

It is of immense importance to identify environmentally concerned consumers and diffuse such concern among others. The present literature has least information about Indians for their environmental concern, so it will be of prime importance to be acquainted with them. In the light of this fact, the paper is centered towards achieving the following objectives.

(1) To investigate the association of levels of environment concern with socio-demographic and psychological characteristics of consumers.
(2) To discover profiles of environmentally concerned consumers across their measured characteristics.

METHODOLOGY

Selection of Variables

To measure environmental concern, NEP scale developed by Dunlap and Van Liere (1978) is utilized which is the criterion variable for the study. The socio-demographic and psychological measures are also incorporated and used as determinants of EC. Respondents' gender, age, living place, educational level, academic intelligence, profession, marital status, family size and economic status are being called as their socio-demographic characteristics and littering concern : LC, pollution concern : PC, perceived consumer effectiveness against pollution: PCEP and civic sense: CS are captured as their psychological features. The base of taking demographic and psychological characteristics is the literature in this field. Annexure at the end of the paper provides detailed information on measured variables.

Sample Profile

The sample constitutes 300 respondents from Ambala district of Haryana State. The sample profile suggested that nearly half (N = 153; % = 51) are females.

Sample age ranges between 15 to 60 and majority of the sample respondents belong to urban areas (74.3%). From educational point of view, the frequency is higher for the graduates (N = 165; % = 55). As far as profession is concerned, one-third (N = 100) are students and two-third (N = 200) are occupational. The sample highly inclines towards unmarried respondents (% = 62.3) than married ones. The proportions of medium sized (N = 232; % = 77.3) and middle class (N = 153; % = 51) families are also obtained high in the sample.

Table 1

Sample Characteristics

Characteristics	Groups or Categories	Frequency	Percent
Gender	Male	147	49
	Female	153	51
City	Rural	77	25.67
	Urban	223	74.33
Age	15 to 25	170	56.67
	26 to 40	96	32.00
	41 and Above	34	11.33
Profession	Students	100	33.33
	Working	200	66.67
Education	School Education	79	26.33
	Graduation and Diplomas	165	55
	PG and Above	56	18.67
Field of Study	Commerce and Management	103	34.33
	Science and Engineering	78	26
	Humanities and Arts	100	33.33
Academic Intelligence	Poor Records	48	16
	Fair Records	111	37
	Good Records	89	29.67
	Excellent Records	52	17.33
Family Size	Small Families	32	10.67
	Medium Size Families	232	77.33
	Large Families	36	12
Family Income	Low Income Group	98	32.67
	Middle Income Group	153	51
	High Income Group	49	16.33

Measurement and Reliability

Environmental concern is measured with a five-point scale ranging from '5 always true' to '1 never true' for the eight items that work in pro-NEP direction (Balance of Nature, Limits to Growth) while the scale is reversed, '1 always true' to '5 never true' for the four statements of Man over Nature that go anti-NEP (Figure 2). As specified by this coding, the minimum score on this scale can become 12 (1×12) whereas maximum can be of 60 (5×12). However, the acquired scores on the scale vary between 26 to 59. The similar five-point measurement is also completed for the predictor psychological variables (LC, PC, PCEP and CS).

The reliability is judged using Cronbach's alpha coefficient. The alpha coefficient of 0.58 is obtained for NEP scale used to measure environmental concern. The coefficient is slightly lower than 0.60 a benchmark established for a good reliability (Ganguly *et al.*, 2009) but well enough for a claim of internal consistency in an exploratory study.

Tools and Techniques

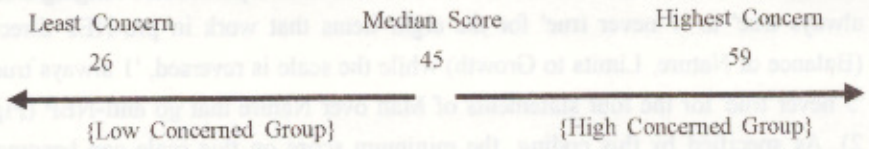
A cross-tab analysis along with Chi-square test of independence or association is applied by using the statistics Cramer's V to measure the degree of association (where the association is found significant). Furthermore, profile of concerned consumers is obtained using proportional analysis.

PRELIMINARY ASSESSMENT

To run Chi-square analysis, all variables are converted to a categorical measure as per the requirement of the test. The scatter plot for dependent EC variable becomes visible with two bipolar ends; therefore, respondents are classified into two groups from median split (M = 45). Figure 2 portrays this categorization. The psychological variables are also categorized into two (low-high) categories. The data for socio-demographic variables: gender, place of living, educational qualifications, academic intelligence, academic orientation, profession, marital status and economic status has originally been obtained as categorical from the questionnaire. Conversely, the data for variable age and family size was ratio data. For the purpose, both the variables have been categorized into three categories (Age: Less than 25; 26 to 40; Greater than 40 and Family Size: small; medium and large sized families). The statistical program SPSS (Evaluation Version 20) is used for coding and further analysis.

Figure 2

Representation of EC Continuum



RESULTS AND INTERPRETATION

Test of Goodness of Fit

The levels of EC will be the dependent variable in the whole of the analysis; so, it is seen whether the division of respondents into two parts is well-suited to data or not. Consequently, a Chi-square test of goodness of fit is performed. Table 2 corresponds to 141 respondents (47%) that fall under low concerned group (score must be less than 45) and 159 respondents (53%) under high environmental concern group (score must be equal to or greater than 45). By setting the prior equal probabilities based on sample size, the test of goodness of fit is run.

Table 2

Test of Best Fit

Levels of Environmental Concern	Observed Frequency	Expected Frequency
Low	141	150
High	159	150
Total	300	300

$\chi^2 = 1.08$ df = 1 p = 0.299

The insignificant Chi-square value ($\chi^2 = 1.08$; $p > 0.05$) shows that there is no considerable difference between observed and expected count. Thus, the respondents are uniformly distributed among these categories and the data is best fitted for carrying out further analysis.

Predictor Variables and Levels of Environmental Concern

The findings about criterion variable on each predictor variable is assessed and defined in this section. In all the tables, along with observed frequencies, figures in parentheses indicate expected count.

Socio-Demographic Variables and Environmental Concern

- **Gender and EC :** Gender is an important variable that may associate with the

levels of consumer environmental concern as gender differences have been found in various studies conducted in different subject areas (Feingold, 1994; Zelezny *et al.*, 2000; Else-Quest *et al.*, 2010). Table 3 gives for each of the two EC categories, frequencies and percentages of all the respondents according to their gender. Females are more inclined towards high environmental concern (N = 86; % = 56.2) while males are symmetrically distributed under two EC categories. The result is in line with many previous studies where it has already been shown that women concern for environment is superior to that of men (McMillian *et al.*, 1995; Zelezny *et al.*, 2000; Alibeli and Johnson, 2009; Arnocky and Stroink, 2010). The literature has been provided with various arguments for these gender differences. The two strong reasons given are the socialization patterns and role expectations (Zelezny *et al.*, 2000; McCright, 2010). Females almost across all the cultures and in India also are socialized to be more nurturing and co-operative. Contrary to this, males are expected to enact the role of 'Bread Winners' and economically provide their family when they will grow up and become fathers. Consequently, they favour economic growth whether on the expense of exploitation of environment and natural resources. However, the insignificant Chi-square value (1.291; $p > 0.05$) shows that the variable gender is not statistically associated with EC levels.

Table 3
Gender and Environmental Concern

Gender	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Male	74 (69.1)	73 (77.9)	147	50.3	49.7	100
Female	67 (71.9)	86 (81.1)	153	43.8	56.2	100

$\chi^2 = 1.291$ df = 1 p = 0.256

- **Age Cohorts and EC :** According to their age, the respondents are grouped and assessed into three cohorts in Table 4. There has been found an inverted U relationship between age cohorts and EC categories. Youngsters (age less than 25) are least concerned for environment (N = 82; % = 48.2); in procession, majority of adults (age 26 to 40) are showing high environmental concern (N = 60; % = 62.5); but dramatically the concern of old age group (Age above 40) declines as respondents equally fall under low and high EC categories (N = 17; % = 50). The percentages reported, thus move in the

favour of group between age 26 to 40 and above 40 for their improved environmental concern than the young population. There are two main arguments for these age differences: first, the life cycle effect and second, the cohort effect (Torgler and Garcia-Valina, 2007). A life cycle or aging effect is there due to being at a certain stage of age and the cohort effect is the result from belonging to a specific generation which covers the attitudes formed in different ages. On this ground, the high concern of the later group is apparent because the respondents in this age cohort have experienced similar economic and environmental conditions in India. The concern of former group may be low due to their birth order. They are born when there are sufficient technological developments in India and have rarely experienced the previous conditions of scarcity and draughts. Technology has provided them with the abundance of things of their choices. Perhaps because of this reason they term environment as a tool to fulfill their needs and are dominant over nature. The variable age is statistically associated with levels of EC but if 10% significance is considered ($\chi^2 = 5.150$; $p < 0.10$). The previous study (Shanka and Gopalan, 2005) can be said to be supportive of present results as this is also in the favour of high age group.

Table 4

Environmental Concern According to Age Cohorts

Age	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Below 25	88 (79.9)	82 (90.1)	170	51.8	48.2	100
26–40	36 (45.1)	60 (50.9)	96	37.5	62.5	100
Above 40	17 (16)	17 (18)	34	50	50	100

$\chi^2 = 5.150$ df = 2 p = 0.076 V of Cramer = 0.131

- **Place of Living and EC** : A 2×2 contingency Table for place of living and environmental concern categories is prepared (Table 5). As a test of association the insignificant chi-square calculated value ($\chi^2 = 0.099$; $p > 0.05$) clarifies no statistical relation between these two attributes; but the percentages calculated in the right side of the Table further presents a unique scenario. An intra-comparison in between rural and urban respondents shows that in both the groups, majority fall under high environmental concern category. An inter-comparison suggests that rural respondents (% = 54.5) have slightly high concern for environment than their urban counterparts

(% = 52.5). The reason may be the difference in the residential conditions of rurals and urbans. Rural people are more close to nature in their everyday activities but the urban living, what is called the 'lifestyle' is much more different. The religiosity among rurals may also be the basis for it. Environment is called the 'Mother Nature' in Indian villages and worshipped under different rituals and festivals. Their high connectivity and religiosity become the cause for their high concern. The result contradicts with Schwepker and Cornwell (1991) as they expect urbans to be more environmental; but supports them for statistical insignificance of results.

Table 5

Place of Living and Environmental Concern

Place	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Rural	35 (36.2)	42 (40.8)	77	45.5	54.5	100
Urban	106 (104.8)	117 (118.2)	223	47.5	52.5	100

$\chi^2 = 0.099$ df = 1 p = 0.753

- **Educational Levels and EC Levels :** Table 6 describes that educational qualifications are somehow related to environmental concern levels as calculated Chi-square value is significant at 10% significance level ($\chi^2 = 4.892$; $p < 0.10$). Cramer's V determines a low relationship between the two (Cramer's V = 0.128). The proportional analysis further refines a direct relationship between educational level and EC. As expected, highly educated group is highly concerned (% = 66.1); the less educated group is least concerned (% = 48.1) and the modest educated (graduates) can be called having moderate concern (% = 50.9). Education is the most powerful weapon which can be used to change the world in optimistic ways. Environmental education may also be a reason in this direction which is now enlarged in the educational curricula with separate subjects both at school and college levels in India. Various studies (Schwepker and Cornwell, 1991; McMillian *et al.*, 1995; Shanka and Gopalan, 2005) are in line with this positive result.

Table 6

Education-wise Environmental Concern

Educational Level	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Up to 12	41 (37.1)	38 (41.9)	79	51.9	48.1	100
Graduation	81 (77.6)	84 (87.4)	165	49.1	50.9	100
PG and Above	19 (26.3)	37 (29.7)	56	33.9	66.1	100

$\chi^2 = 4.892$ df = 2 p = 0.087 V of Cramer = 0.128

- **Academic Intelligence and EC :** Table 7 provides a snapshot of the percentages scored by respondent groups for their academic intelligence. The finding moves in the favour of better concern of high academic achievers in all the class levels as their high percentage share is visible from the Table. This result simply points out that educational qualifications are important but the psychic efficiency that is attained during educational process is more vital. There is a difference between those who are just 'educated' and those who can be called 'educated effectively' and the same difference is noticeable here. This variable has also been found significant in determining socially responsible consumption behaviour of student

Table 7

Academic Intelligence and Environmental Concern

Educational Level	Academic Intelligence	Frequencies		Total	Percentages		Total
		Low EC	High EC		Low EC	High EC	
Up to 12	Academically Poor	15	11	26	57.7	42.3	100
	Academically Fair	26	27	53	49	51	100
Graduation and Diplomas	Academically Poor	9	12	21	42.8	57.2	100
	Academically Fair	64	52	116	55.2	44.8	100
	Academically Good	8	20	28	29.6	71.4	100
Post Graduate and Above	Academically Poor	1	0	1	100	0	100
	Academically Fair	13	20	33	39.4	60.6	100
	Academically Good	3	3	6	50	50	100
	Academically Excellent	2	14	16	12.5	87.5	100

consumers by Singh and Gupta (2011). The present finding in which environmental concern varies according to academic intelligence is consistent with this previous finding.

- **Academic Orientation and EC :** As can be seen from Table 8; of the 103 business students majority (N = 63; % = 61.1) have high concern while this percentage is very low (N = 88; % = 49.4) for non business group. Thus, it is interpreted that the group from business orientation believes in environment protection over economic development and accept that there are limits to growth beyond which the society can never expand. The reason may be the changing dimensions and parameters upon which the businesses were conducted previously. Now, the business study area is also enlarging and the B-schools in India are aligning the stream with subjects like social responsibility and environmental management in anticipation of an affirmative change. The significant Chi-square statistic (the variable is expressed as significant at a probability level of 0.10) also highlights noteworthy association of academic orientation with EC. The degree of association as found is 0.113. The significance of result contradicts Shanka and Gopalan (2005) where field of study originated as an insignificant determinant.

Table 8

Academic Orientation and Environmental Concern

Field of Study	Frequencies		Total*	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Business	40 (47.7)	63 (55.3)	103	38.9	61.1	100
Non-Business	90 (82.3)	88 (95.7)	178	50.6	49.4	100

$\chi^2 = 3.609$ df = 1 p = 0.057 V of Cramer = 0.113

* The total may not be 300 due to missing cases for those who are only matriculate

- **Profession and EC :** Table 9 reveals that although not statistically related with levels of environmental concern, ($\chi^2 = 0.542$; $p > 0.05$) still according to variable profession more of the working sample is showing their concern for environment than their students counterpart (% Occupational = 54.5 > % Students = 50). The results are reinforced with age as maximum sample of students must lie in the group of below 25 years age. There may be two probable reasons for the result. First is same, the lifecycle and cohort effect as explained earlier in age. The second may be the financial support with earnings which is in the hands of working sample. This is why by not being

at a particular stage of financial support, financial dissatisfaction put downward pressure on students' environmental concern. The result complements Schwepker and Cornwell (1991) and Mostafa (2007).

Table 9
Environmental Concern as per Profession

Profession	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Occupational	91(94)	109 (106)	200	45.5	54.5	100
Students	50 (47)	50 (53)	100	50	50	100

$\chi^2 = 0.542$ df = 1 p = 0.462

- **Marital Status and EC :** The variable marital status is not significantly associated with levels of EC ($\chi^2 = 0.07$; $p > 0.05$) yet the calculated percentages in Table 10 report that environmental concern of married respondents is better than unmarried respondents (% Married = 54 > % Unmarried = 52.4). The particular cause may be the 'parenthood effect'. To be specific with females, the parenthood effect and the motherhood mentality both work here when this mentality actually changes to motherly care. McCright (2010) also obtain that motherhood has increased environmental concern for women. The same is applicable to fathers, as their responsibility is to provide safety to their family in all the ways; it makes them seeking the welfare of environment for the sake of their children as a ruined environment can negatively impact them. The result is supported by Laroche *et al.* (2001) as they assert that married respondents who were parents also were more willing to pay high price for environment protection.

Table 10
Environmental Concern and Marital Status

Marital Status	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Married	52 (53.1)	61 (59.9)	113	46	54	100
Unmarried	89 (87.9)	98 (99.1)	187	47.6	52.4	100

$\chi^2 = 0.070$ df = 1 p = 0.791

- **Family Size and EC :** The result in Table 11 demonstrates that a high proportion of large sized families (58.3%) are highly concerned. The medium

sized families are average in their concern (53%) and small sized families are least concerned (47%). The rational in the favour of large sized families may be the health concerns and well-being of the family from the adverse consequences of deteriorating environment. The variable is not statistically related with environmental concern as Chi-square statistic is insignificant ($\chi^2 = 0.893$; $p > 0.05$).

Table 11

Environmental Concern aligned with Family Size

Family Size	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Small Families	17 (15)	15 (17)	32	53.1	46.9	100
Medium Sized	109 (109.1)	123 (122.9)	232	47	53	100
Large Sized	15 (16.9)	21 (19.1)	36	41.7	58.3	100

$\chi^2 = 0.893$ df = 2 p = 0.640

- **Economic Status (ES) and EC :** It is evident by the significant Chi-square value in Table 12 ($\chi^2 = 8.675$; $p < 0.05$) that ES and EC are reliably associated. The relationship (Cramer's V = 0.17) is low but significant. Taken in order, lower class is least concerned, middle class is more alarmed than lower class but lack behind by high class as eventually high class is farthest than middle class (59.2% > 58.8% > 40.8%). So, as the families become stronger in their economic standing their environmental concern too become elevated. In literature, various possibilities are assumed for the same result. According to Torgler and Garcia-Valina (2007) high income group has less pressing economic problems and more able to reduce their standard of living, thus support all the causes for protection of environment and solve global environment problems. Mostafa (2007) also demonstrates that EC is a post-material value that develops among wealthy people once the more basic needs of food and safety have been met. Thus, these studies are supported here for the matching result in the favour of high economic group although with differing reasons.

Table 12

Environmental Concern along with Economic Status

Economic Status	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Lower Class	58 (46.1)	40 (51.9)	98	59.2	40.8	100
Middle Class	63 (71.9)	90 (81.1)	153	41.2	58.8	100
High Class	20 (23)	29 (26)	49	40.8	59.2	100

$\chi^2 = 8.675$ df = 2 p = 0.013 V of Cramer = 0.170

Psychological Variables and Environmental Concern

- **Littering Concern and EC :** Littering concern is found notably associated with the levels of environmental concern (Table 13) as observed by highly significant Chi-square value ($\chi^2 = 23.085$; $p < 0.01$). The degree of association as found by Cramer's V is 0.277. It can be interpreted by the results that cleanliness and hygiene values promote people environmental concern. The proportion of those respondents are high who have both high littering concern and environmental concern (N = 105; % = 66) and the proportion is also very low (% = 34) for the respondents who are not able to convert their concern for litter to concern for environment. The point that may be contributing to this result is increasing awareness of the litter that garbage and plastic bags create and the adverse impacts of the same on environment. The support from Schwepker and Cornwell (1991) is also applicable here.

Table 13

Littering Concern and Environmental Concern

Littering Attitude	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Low LA	87 (66.3)	54 (74.7)	141	61.7	38.3	100
High LA	54 (74.7)	105 (84.3)	159	34	66	100

$\chi^2 = 23.085$ df = 1 p = 0.000 V of Cramer = 0.277

- **Pollution Concern and EC :** Table 14 relates respondents' pollution concern with their environmental concern. The two attributes are found significantly correlated ($\chi^2 = 6.741$; $p < 0.01$) with low but significant association (Cramer's V = 0.15). A high percentage of respondents have high pollution concern

together with high environmental concern (N = 87; % = 60.8). This suggests that those who are genuinely concerned about pollution are also concerned for the environment as a whole. The result matches with Schwepker and Cornwell (1991) view that attitude towards pollution is affecting one's attitude towards ecologically conscious living which is ultimately the pro-NEP that humans must live in harmony with nature.

Table 14

Pollution Concern and Environmental Concern

Pollution Concern	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Low Concern	85 (73.8)	72 (83.2)	157	54.1	45.9	100
High Concern	56 (67.2)	87 (75.8)	143	39.2	60.8	100

$\chi^2 = 6.741$ df = 1 p = 0.009 V of Cramer = 0.150

- **Perceived Consumer Effectiveness against Pollution and EC :** When Indians are also tested for their pollution effectiveness (Table 15), it is found significantly associated with levels of EC ($\chi^2 = 30.250$; $p < 0.01$) with moderate degree of relationship (Cramer's V = 0.318). The analysis signifies that proportion of people with improved perceptions and high environmental concern is high (N = 108; % = 67.9). Therefore, it can be said that with the former variable pollution concern, perceived consumer effectiveness against pollution is also an important feature of environmentally concerned consumers. Individuals' concern for environment is must but they should also believe that environmental quality can only be improved by their own efforts instead unburdening the responsibility on others. The result by Kinnear *et al.* (1974) is thus highly supportive here.

Table 15

Perceived Consumer Effectiveness Against Pollution and Environmental Concern

PCEP Concern	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Low PCEP	90 (66.3)	51 (74.7)	141	63.8	36.2	100
High PCEP	51 (74.7)	108 (84.3)	159	32.1	67.9	100

$\chi^2 = 30.250$ df = 1 p = 0.000 V of Cramer = 0.318

- **Civic Sense and EC :** A cross-analysis of levels of civic sense and environmental concern in Table 16 suggests a reliable association between them ($?^2 = 4.365$; $p < 0.05$), with degree of relationship 0.121. Nearly three-fifth respondents in the high civic group have high environmental concern as compared to only 47% who belong to low civic group. Therefore, the high civic minded individuals are also environmentalists among their least civic counterparts. The explanation of this result is obtained on the terms that civic minded individuals work in notion with society's norms and ethics and can very well understand that the smooth and peaceful working in society is possible only if this is aligned with environmental ethics and norms. Thus, the need of the hour is civic consciousness which can enhance environmental consciousness as well. The significance of variable supports the previous result by Singh and Gupta (2011).

Table 16

Civic Sense and Environmental Concern

Civic Sense	Frequencies		Total	Percentages		Total
	Low EC	High EC		Low EC	High EC	
Low CS	80 (71)	71 (80)	151	53	47	100
High CS	61 (70)	88 (79)	149	41	59	100

$\chi^2 = 4.365$ df = 1 p = 0.037 V of Cramer = 0.121

CONCLUSION

Supplementing previous work, the exploration and description of environmentally concerned consumers will prove a fruitful start. A number of variables are found statistically related with environmental concern and have gained support from the previous studies conducted across the globe. The psychological variables are found to be of immense significance in understanding environmentally concerned consumers. All of these variables; littering concern, pollution concern, perceived consumer effectiveness against pollution and civic sense relate directly and significantly with EC. The socio-demographic variables: age, education, academic orientation and economic status are also significantly associated with EC levels. It is revealed that females, high aged group respondents, rural residents, better educated with academic achievements, business academics, the occupational class, from large sized families and high status group are concerned and supportive of the environment. The

psychologically strong consumer groups with high civic sense, littering concern, pollution concern and those who perceive that their own efforts can contribute to minimize pollution problem also exhibit high levels of environmental concern. Therefore, the study proves a promising step by displaying those factors which contribute in this concern making. Consequently, it has some important implications and directions to different sections of society and in the subsequent part these are addressed.

IMPLICATIONS AND SUGGESTIONS

The green marketers may locate their potential consumer groups that are seen high with regard to environmental concern. As they are highly concerned for environment, there is also a high probability of their getting more involved in environmentally related purchasing. In this direction, promotional campaigns can be initiated according to the requirement of particular consumer segment. Hygiene conscious and civic-minded individuals can favourably respond to green products and green claims of marketers. So, there is another implication to enhance the hygiene and civic values which can ultimately promote environmental values among general public. Government, with the support of media, can work actively on this. The religious values can also promote environmental sustainability, thus must be endorsed. The awareness of any problem can become a strong support and a cause for its removal. For the same, policymakers' rather binding general public in rules and regulations may benefit more by making them informed and updated on current environmental issues, problems and the possible ways of their solution. It highlights as a cue for government and NGO's to help empower weak consumer segments. The findings also have important connotations for 'Swachh Bharat Abhiyan' as recently launched in India as only environmentally concerned consumers and consumers having civic values may become a powerful helping hand for the purpose.

FURTHER RESEARCH

The paper drives a number of avenues for further research. First, the researchers are directed to remain precarious in properly using the appropriate terms to their measurements in order to avoid any inconsistency and confusion. Secondly, environmental knowledge and opportunities to behave environmentally must also be studied in India. Third, intentions to behave in environmental ways can be also studied as a criterion variable with the same predictor variables as used in the paper; the feedback that may be obtained from consumers will shed additional

light on the consumer segments which will be renovating their concern into performance. Likewise, the reasons for the concern-behaviour gap may be found out in terms of mediator-moderator effects.

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ANNEXURE

Description of Certain Measured Variables

- **Academic Intelligence**

  Academic intelligence represents an individual's academic achievements. It is assessed with the individual's first division (above 60% marks) in the levels of his/her education. First division in one level as fair records, in two levels good records and in three or more levels is termed as excellent academic records. No response of first division in any of the educational level is termed as poor academic records.

- **Family Size**

  Number of persons in the household makes up the family size. The cataloging is finished by taking; up to 3 member families as small families; 4 to 6 members in medium sized families and above 6 members in large families.

- **Economic Status**

  To determine economic status, family income is asked upon. Low income category includes individuals with monthly family income below Rs. 10,000. Middle class responds to income category between Rs. 10000 to Rs. 30000 and those having monthly family income above Rs. 30000 are considered as high income class.

- **Littering Concern (LC) (Range of Scores–2 to 10)**

  Littering concern simply means a state of consumer anxiety for the cleanliness around surroundings and public places; and a feel of unease seeing trash and debris here and there which create visual pollution. The following two items which measure littering concern are used here from Schwepker and Cornwell (1991).

  (1) Seeing litter in streets and parks bothers me.

  (2) Seeing someone litters upsets me.

- **Pollution Concern (PC) (Range of Scores–7 to 20)**

  As the name implies, concern for pollution problem is defined as pollution concern. The items are selected from SRCB scale of Antil and Bannett (1979, 1984) which are deemed suitable for its measurement. The statements are as follows.

  (1) Pollution is presently one of the most critical problems facing this nation.
  (2) It greatly irritates me to think that the government doesn't do more to help control pollution of the environment.
  (3) I think that a person should urge his/her friends not to use products that pollute the environment.
  (4) When I think of the ways industries are polluting I get frustrated and angry.

- **Perceived Consumer Effectiveness against Pollution (PCEP) (Range of Scores–2 to 10)**

  Here, this construct is defined as consumers' perceptions about their own self in context of pollution problem. How firmly consumers view that their own efforts can contribute in pollution abatement make their PCEP. The two statements here are utilized from the work of Yuksel (2009).

  (1) While thinking about the possible solutions of reducing pollution I think I cannot do anything individually (r).
  (2) It is useless to individually spend efforts in order to decrease environment pollution (r).

- **Civic Sense (CS) (Range of Scores–10 to 25)**

  Civic Sense is nothing but social ethics which are the investigation into the basic concepts and fundamental principles of human conduct. People consideration for the unspoken norms of the society makes their civic sense. Thus, it is a measure of how appropriately consumers behave in society when they are outside and interacting on public places.

  (1) While driving I use horn quite liberally.
  (2) While parking vehicle I make efforts not to block others' way.
  (3) I always ensure that my music system should not disturb others.
  (4) After using a product I search for the dustbin to throw away the waste.
  (5) On a railway crossing I remain in my lane to make way for others.