

Environment Behaviour among Higher Secondary Students of Jabalpur

Category

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ABSTRACT

The present study measured environmental behaviour of higher secondary students studying in various schools at Jabalpur, Madhya Pradesh. Most students of different disciplines studying in schools affiliated to both Central and Madhya Pradesh Boards of Secondary Education have recorded average to positive environmental behaviour. The girls were more positive in their environmental behaviour than the boys across all streams. The students of humanities had the minimum and that of biology or mathematics showed the maximum environmental behaviour, which followed the order of Mathematics \geq Biology \geq Commerce $>$ Humanities. The differences among streams were statistically significant only among the students affiliated with Madhya Pradesh Board and were insignificant for those affiliated with the Central Board. The students of Madhya Pradesh Board have shown a better environmental behaviour in comparison with that of the Central Board.

INTRODUCTION

Global problems of depleting natural resources, increasing pollution, rapid urbanization and expanding population growth challenge the ways people live. The modern human life style is fast becoming energy and waste intensive, resulting in over exploitation of natural resources, degradation and modification of natural habitats and deterioration of environmental quality. These recent changes in the human life style have become the major precursors of new environmental problems throughout the world, especially in the metropolises. The 'UN World Conference on the Environment at Stockholm in 1972', the 'Montreal Protocol at Montreal in 1990', the 'Earth Summit at Rio de Janeiro in 1992', the 'World Conservation Congress at Barcelona in 2008', and periodical meetings of 'Intergovernmental Panel on Climate Change (IPCC)' show that environment is on the priority agenda of the international community. Global warming has recently emerged as the most important problem of societal pollution, severely threatening the very survival of human race. The main hurdle in tackling environmental degradation in developing countries like India is not only the lack of scientific knowledge but also the will to act.

Environmental problems have traditionally been considered as technical and economic problems, while in the recent decades the social dimensions of environmental problems such as public attention and peoples' attitude towards environment have become one of the areas of environmental sociology and environmental psychology. In this respect, environmental behaviour of individuals may become vitally important in solving the unique local, regional and global environmental problems. There may be three orthogonal dimensions of environmental behaviour: (1) environmental knowledge, (2) environmental values, and (3) ecological behavior intention. Environmental knowledge and environmental values shape ecological behavior intentions, which, in turn, may regulate general ecological behavior (Kaiser *et al.*, 1999). Environmental behaviour may determine our actions towards environmental conservation and preservation or how we can change our exploitive behaviour into eco-friendly behaviour. Ecological behaviour may appear to be susceptible to a wide range of influences beyond one's control (Hines *et al.*, 1987). For example, our perception makes use of a material as resource or waste; cost of water affects water conservation;

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architecture of a home affects energy consumption; political measures promote or demote optimal usage of resources or/and minimal generation of wastes by the society. Thus, socio-cultural constraints may also determine which ecological behaviour is easier to carry out and which is harder. Awareness and attitude, therefore, may not be the only determinants of environmental behaviour.

The present study has, therefore, been conducted to measure and compare environmental behaviour of higher secondary students studying of Jabalpur city in the state of Madhya Pradesh according to their stream of study, board of affiliation and gender.

Hypotheses

- There are no differences in environmental behaviour of students belonging to the discipline of humanities, commerce, biology and mathematics.
- There are no differences in environmental behaviour of students between Central and Madhya Pradesh Boards of Secondary Education.
- There are no differences between male and female students in their environmental behaviour.

Method

The present study was based on survey method and stratified sampling. The stratified sampling design provided due representation to gender, stream of study and board of affiliation. The sample for the present study consisted of a total 1,385 higher secondary students of the XI standard, selected randomly from thirteen schools (six affiliated to Madhya Pradesh Board and seven to Central Board of Secondary Education) located in the city of Jabalpur, Madhya Pradesh, India. Out of the total sampled students, 722 belonged to the schools affiliated to Madhya Pradesh Board and 663 to Central Board. The numbers of male and female students belonging to the Central Board were 13 and 42, 102 and 145, 18 and 12, and 168 and 163, respectively, in the discipline of biology, commerce, humanities and mathematics. The corresponding values for Madhya Pradesh Board were 11 and 86, 106 and 191, 15 and 78, and 108 and 127, respectively.

The questionnaire-based tool "Environmental Behaviour Scale" (Singhal *et al.*, 2010) was used to measure environmental behaviour among the students. The score of the tool ranged from 0 (minimum) to 60 (maximum). The tool could classify subjects into three discrete groups, i.e., negative behaviour (scores from 0 to 36), average behaviour (scores from 37 to 47), and positive behaviour (scores from 48 to 60). On each sampling date, the selected students from a particular stream of study in a school were gathered in a separate classroom and were instructed for proper attempt of the tests. The completed test booklets were scored strictly according to the prescribed method using the scoring key provided with the manual. The scores so obtained were tabulated and processed by standard statistical methods (Garrett, 1981; Steel & Torrie, 1980; Snedecor & Cochran, 1989; Asthana,

Results

Environmental behaviour ranged from 26 to 58 among boys and 26 to 60 among girls pursuing different disciplines in schools affiliated to the M.P. Board. The proportion of boys having the positive environmental behaviour was 82% in biology, 51% in commerce, 40% in humanities and 59% in mathematics disciplines. The percentage of the girls with the positive behaviour was 52%, 62%, 38% and 69%, respectively, in biology, commerce, humanities and mathematics streams. The negative environmental behaviour was recorded in only 0%, 8%,

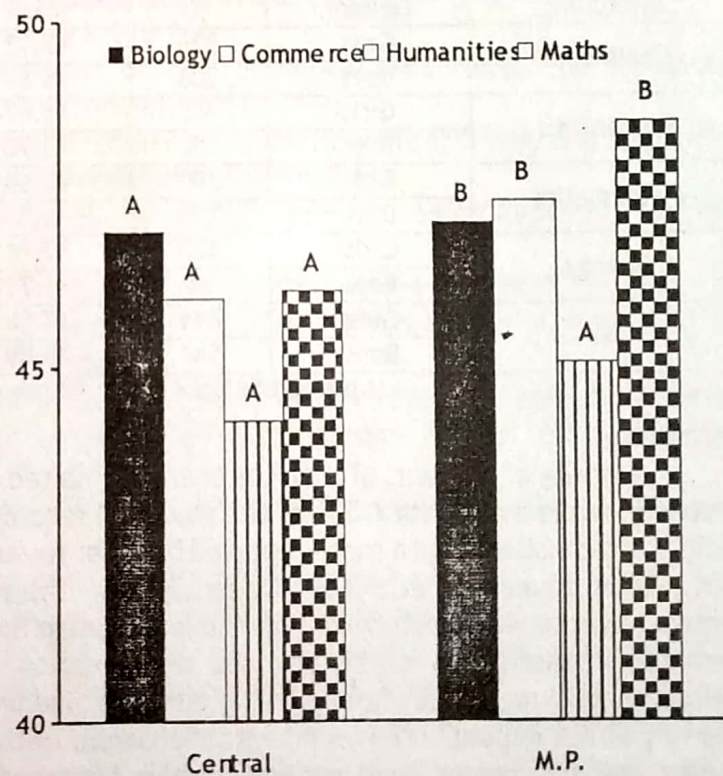
27% and 7% of boys, and 8%, 6%, 11% and 3% of girls, respectively, biology, commerce, humanities and mathematics disciplines.

behaviour ranged from 22 to 59 among boys and 26 to 59 among girls pursuing different disciplines in schools affiliated to the Central Board. The positive environmental behaviour was observed in 38%, 48%, 22% and 34% of boys, and 67%, 52%, 75% and 60% of girls, respectively, in biology, commerce, humanities and mathematics streams. The negative environmental behaviour was recorded in 16%, 15%, 34% and 18% of boys, and 4%, 10%, 8% and 8% of girls, respectively, biology, commerce, humanities and mathematics disciplines. The mean environmental behaviour of the students affiliated to the M.P. Board differed significantly among different disciplines ($F_p < 0.001$), but it did not differ significantly for students of the Central Board ($F_p > 0.05$).

The students pursuing the discipline of humanities recorded the minimum mean values of environmental behaviour in both the boards (Figure 1). The maximum mean values were found in case of mathematics students affiliated to M.P. Board and biology students affiliated to the Central Board. Environmental behaviour was in the order of Mathematics \geq Biology \geq Commerce \geq Humanities among students of both the boards (Figure 1). The mean values showed that all students had average to positive environmental behaviour.

Figure 1: Comparison of mean environmental behaviour of students belonging to different disciplines in Central and M.P. Boards of Secondary Education. Means that differ significantly between disciplines at $p = < 0.05$ are indicated by different alphabets (Duncan's New Multiple Range Test)

The students of M. P. Board recorded higher levels of environmental behaviour in comparison with that of Central Board in all the streams (47.1 vs. 46.95 in biology, 47.42 vs. 45.98 in commerce, 45.08 vs. 44.23 in humanities, and 48.55 vs. 46.09 in mathematics) (Table 1). However, such differences between the boards were statistically significant only in the stream of commerce ($p = < 0.05$) and mathematics ($p = < 0.001$), and insignificant in biology and humanities ($p = > 0.05$) (Table 1). The students of all the streams taken together belonging to M.P. Board also recorded a significantly more positive environmental behaviour in comparison with that of Central



Board of Secondary Education (47.45 vs. 46.03; $p = <0.001$; Table 1).

Table 1: Comparison of environmental behaviour of students between the two boards,

Discipline	Board	N	Mean	Std. Dev.	CR
Commerce	Central	247	45.98	7.32	2.52*
	M.P.	297	47.42	6.03	
Humanities	Central	30	44.23	8.50	0.58
	M.P.	93	45.08	6.46	
Mathematics	Central	331	46.09	7.58	4.14***
	M.P.	235	48.55	6.03	
Biology	Central	55	46.95	7.42	0.18
	M.P.	97	47.10	5.52	
All	Central	663	46.03	7.51	3.87***
	M.P.	722	47.45	6.10	

* $p = <0.05$; ** $p = <0.01$; *** $p = <0.001$

The female students recorded significantly higher mean environmental behaviour than the male students in the stream of commerce (47.32 vs. 45.88), humanities (45.67 vs. 42.7) and mathematics (48.69 vs. 45.45), and insignificantly higher levels in biology (47.11 vs. 46.71) (Table 2). The gender differences were more pronounced in mathematics streams ($p = <0.001$), less pronounced in commerce and humanities ($p = <0.05$), and statistically insignificant in the discipline of biology ($p = >0.05$) (Table 2). The girls of all the streams taken together had a significantly more positive environmental behaviour than the boys (47.58 vs. 45.5; $p = <0.001$).

Table 2: Comparison of environmental behaviour of boys and girls.

Discipline	Gender	N	Mean	Std. Dev.	CR
Commerce	Girls	336	47.32	6.32	2.46*
	Boys	208	45.88	7.14	
Humanities	Girls	90	45.67	6.53	2.12*
	Boys	33	42.70	7.80	
Mathematics	Girls	290	48.69	6.22	5.59***
	Boys	276	45.45	7.55	
Biology	Girls	128	47.11	6.07	0.29
	Boys	24	46.71	7.78	
All	Girls	844	47.58	6.33	5.57***
	Boys	541	45.50	7.44	

* $p = <0.05$; ** $p = <0.01$; *** $p = <0.001$

Discussion

Majority of students of both the boards exhibited average to positive environmental behaviour, while a minority (<33% of the students) recorded the negative behaviour. These findings are consistent with those reported by other researchers (Clark *et al.*, 2003; Tonglet *et al.*, 2004; Kumari *et al.*, 2006; Onder, 2006). The proportion of the students having positive environmental behaviour was the minimum in the discipline of humanities and the maximum in disciplines of biology and mathematics. Such results may denote that environmental knowledge, family background or/ and well-being of the subjects may not have any direct impact on environmental behaviour of the students. Analyses in political science and psychology lend support to the hypothesis that environmental quality is perceived as a luxury good that gains significance only when basic needs have been met. Thus, the wealthy societies and nations are more likely to become focused on environmental

behaviour than the poor ones (Inglehart, 1990, 1997). In contrast, Wray-Lake *et al.* (2008) have concluded that there was an inverse relation between trends of affluence and youth's personal environmental responsibility and conservation behaviours. Many researchers have reported that level of education (Goetz *et al.*, 1998), happiness (Frey & Stutzer, 2002) and population pressure (Brechin & Kempton, 1994) raised environmental concern and subsequently improved individuals' environmental behaviour (Duroy, 2005). Environmental behaviour was similar among students pursuing biology, commerce and mathematics disciplines, which was more positive than that recorded for humanities discipline. The students of M.P. Board revealed a more positive environmental behaviour in comparison with those of Central Board. The girls showed more positive environmental behaviour relative to the boys. It seems plausible that the cultural affinity and moral norms in conjunction with education standard of students may play a substantial role in shaping their environmental behaviour. Typically, Indian girls in comparison to boys are more involved in daily chores of their home and management of family affairs, thereby making them more concerned and sensitive about their environment. Tonglet *et al.* (2004), based on a study of recycling behaviour of British society, observed that moral norms may be an important factor for recycling behaviour in addition to attitude, subjective norm and perceived control.

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