

Relationship between Environmental Awareness and Attitude towards Environment among Secondary School Students

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Abstract: The major objective of the study is to find out the environmental awareness among the secondary school students and their attitude towards the environment. **No research has been made till now to compare secondary school students of two states viz., Tamilnadu and Kerala that share common traditions, customs and belief.** The coefficient of correlation obtained ($r = 0.52$, $p < 0.01$) is significant at 0.01 level of significance. **Hence, it can be concluded that there exists significant positive relationship between Environmental Awareness and Attitude towards Environment among Secondary School Students.** The value of shared variance ($SV=27.04$) indicates that 27.04 percent of Attitude towards Environment among Secondary School Students is determined by their Environmental Awareness. Boys and Girls at Secondary School level possess comparatively same Environmental Awareness and the level of awareness is least or not affected by the type of management (Government and Private Schools) at all. This study reveals that higher the level of awareness of secondary school students, higher the level of their attitude towards environment and the girl students possess significantly higher Attitude towards Environment than boys. Also, it can be concluded that the Private School Students possess significantly higher Attitude towards Environment than Government School Students. **Further, Kerala State reflects comparatively little higher gender parity compared to that in Tamilnadu with female respondents constituting 40.3% (with respect to 59.7% boys) of the population compared to 46.4% (with respect to 53.6% boys) in Tamilnadu.**

KEYWORDS: Attitude, Environment Attitude, Environment Awareness, Sustainable Development,

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I. INTRODUCTION

Land is a finite and valuable resource upon which we depend for our food, fiber and fuel wood- the basic amenities of life. India is the second most populated country in the world and has 2.4% of the total land area accommodating 16% of the world's population. Humans continue to engage in environmental unfriendly behaviors at the individual, corporate, governmental and societal levels. In the today's emerging world, all lives of human beings and of the animals are at great risk due to environmental pollution and the root cause of this is over population, greed and unconcerned attitude of human beings towards environment. Our country exerts excessive pressure on natural resources and was realized in the late twentieth century that some widely-accepted rooted values, attitudes, and beliefs were the source of ecological problems. Tomorrow's leaders need to be equipped for tomorrow's challenges, and we must adequately prepare our children for the future they will inherit. That requires a commitment to providing children with environmental education that helps them become the educated thought leaders of tomorrow.

The primary goal of the study was to determine the level of environmental awareness and environmental attitudes of secondary education students and to predict the degree to what the change in environmental approach, whose effect is felt throughout the entire world, was reflected in students. The secondary goal is to establish relationship between environmental awareness and attitude towards environment among secondary school students selected for the survey.

II. LITERATURE REVIEW

Environmental Awareness

Dr. Sujit Bordhan (2017) in his study in Assam has inferred that Urban students, Girl students and Assamese medium students have higher awareness regarding the environment. Neeru Rathee, Suman Thakran (2017) in their study revealed that there exists significant difference in the level of environmental awareness between girls and boys and urban and rural. The girls and the urban students reflected higher environmental awareness in comparison to their counterparts. Badoni A.K (2017) in his research conducted in Garhwal Dist in Uttarakhand found that the Urban secondary students and girl students had scored higher mean values than their

rural and male counterparts respectively on environmental awareness. Aruna Singh (2017) in her study in Gwalior, Madhya Pradesh revealed that the students were observed to be having adequate environmental attitude level and found that gap exists in attitude level when students were compared gender wise. Girl students were found more environmentally oriented than boys. The findings by Dhanya C.H, Mrs. Pankajam R (2015) reveal that totally 26% of the secondary students belong to low level of environmental awareness, 48% of the secondary students belong to moderate level of environmental awareness, and 26.6% of the secondary students belong to high level of environmental awareness. Also it is found that there is no significant impact of environmental awareness among secondary school students. But type of school and eco club has significant impact of environmental awareness among secondary school students. Erandi C. Wijesinghe et al (2015), in their study in Srilanka found that Environmental Consciousness Derived from Classroom Teaching a significant change in the attitudes towards the environmental friendly design. Kumud Ghosh (2014) in his study reveals that secondary School students of Golaghat district of Assam possess strong positive correlation between environmental awareness and attitude towards environmental education.

Environmental Attitude.

Ponmozhi D, Krishnakumari S (2017) in their study disclosed that the medium of instruction and School type uniquely accounted for approximately 13% and 2% of the Environmental Attitude. The results of Negar Sultana et. al (2017) study indicated that secondary (grade 9 and 10) students of Tangail, Bangladesh had higher level of environmental knowledge and attitude towards environmental issues. Tribhuvan Bhartiya (2016) in his study concluded that in regard to awareness and knowledge high school students are superior to higher secondary students but on the contrary higher secondary students are superior in attitude. Mehreteab Tesfai et.al (2016) in a study for assessing attitude of students of Czechia reported gender appeared to be the most influential factor in determining student's environmental perceptions. Students who have high scientific literacy tend to choose more appropriate decisions and seem more knowledgeable as reported by Ugulu et.al 2013. Ogunbode and Arnold (2012) stated that schools are possibly the better vehicles for improving environmental awareness than are universities as environmental issues are more readily incorporated across school curricula. Gender, age and socioeconomic status function as sources of variation for environmental attitudes (Ozsoy 2012). Teachers and school curriculum are accordingly instrumental factors in the formation of these attitudes (Said et al. 2003; Kandir et al. 2012).

III

METHODOLOGY

Study Location: Tamilnadu and Kerala
Study Duration: Jan 2018 to Feb 2018 – 02 Months
Sample Size: 690
No of Schools: 16 (08 each from Tamilnadu & Kerala)
Type of School: 08 Government managed & 08 Private managed
Descriptive survey method of the co-relational type and *Stratified Random*
Research Method: *Probability Sampling*
Research Objectives: The following objectives were proposed:

- [1] To find out the level of environmental awareness and attitude towards environment among secondary school students
- [2] To compare environmental awareness and attitude towards environment among secondary school students based on gender of the students, type of management of the school and state where the school students belong to.
- [3] To compare the environmental attitude among secondary school students based on level of awareness towards environment

Study Mode:

Questionnaire Type:

Languages Used:

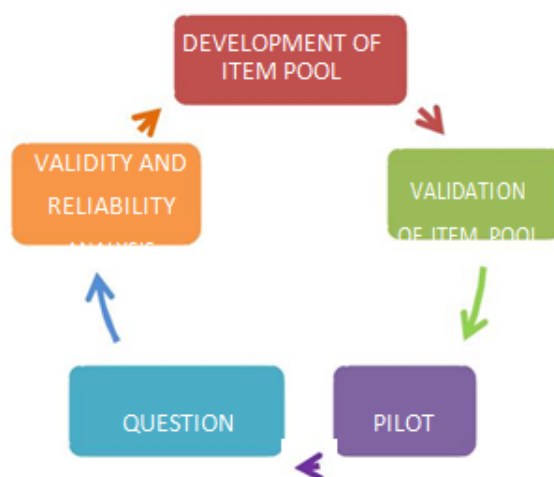
Synchronic study because the entire data is collected within a single time frame window
Likert Scale marking
English, Tamil, Malayalam

Gender & State Parity: Break-down data of the survey:

Gender-wise Breakdown		State-wise Breakdown	
Boys	392	Kerala	362
Girls	298	Tamilnadu	328
Total	690	Total	690

The questionnaire was bifurcated into two heads as causes/level of environmental pollution (for checking awareness) and conservation of environment (for checking level of attitude) for convenience of study. The final form of the tool for assessing Environmental Awareness contains twenty five items, nine statements are negatively worded and sixteen statements are positively worded. Also the tool for assessing Environmental Attitude, twenty five items, three statements is negatively worded.

Stages in Development: A five-stage model was adopted in the development of the survey study. These stages were illustrated as below:



IV. ANALYSES AND INTERPRETATION OF DATA

The dependent variables in this study are Environmental Awareness and Environmental Attitude. The independent variables are Gender, State (Kerala & Tamilnadu) and type of Management. To establish any significant difference, the independent variables in relation to Environmental Awareness and Attitude of students has been analyzed using Analysis of Variance (ANOVA) technique.

Variable	No	Mean	Median	SD	Percentage of Students involved		
					High	Avg	Low
Environmental Awareness	690	87.05	88.00	10.21	23.0	52.0	24.9
Attitude towards Environment	690	95.74	97.00	12.04	22.3	52.6	25.1

Tab 1. Level of Environmental Awareness and Attitude towards Environment among Secondary School Students

The mean value for Environmental Awareness is 87.05 and the standard deviation is 10.21. It also shows that twenty three percent of Secondary School Students has high Environmental Awareness, fifty two percent has average and 24.9 percent have low Environmental Awareness. The comparison of Environmental Awareness is graphically represented in below Figure:

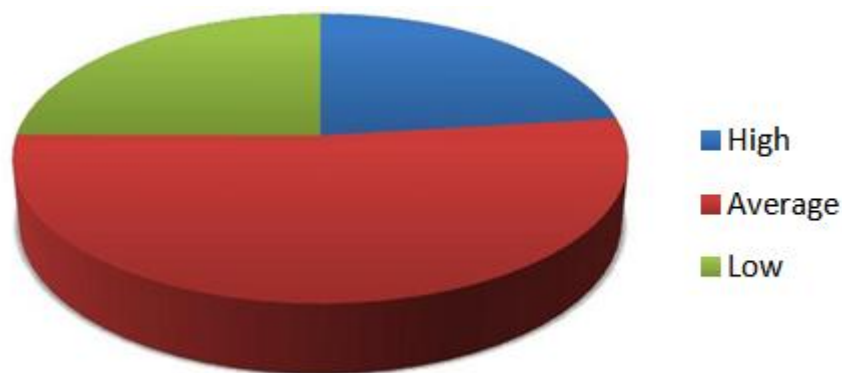


Fig:1 Pie Diagram showing the level of Environmental Awareness among Secondary School Students

The summary of result of test of significance of difference between means of Environmental Awareness and Attitude towards Environment based on sub-samples are given under following heads:

Based on sub-sample - Gender

Variables	Gender	N	Mean	SD	T
Environmental Awareness	Male	337	86.47	10.14	1.48
	Female	353	87.61	10.27	p > 0.05
Attitude towards Environment	Male	337	93.76	13.28	4.28
	Female	353	97.64	10.39	p < 0.01

Tab 2 Test of significance of difference based on gender of students

It is evident from Table 2, the obtained 't' value ($t = 1.48, p > 0.05$) for Environmental Awareness is not significant at 0.05 level. It implies that there exists no significant difference in the mean scores of Environmental Awareness of Boys and Girls at Secondary level. **It can be concluded that Boys and Girls at Secondary level possess comparatively same Environmental**

Awareness. Table 2 also proved that the obtained 't' value ($t = 4.28, p < 0.01$) for Attitude towards Environment is significant at 0.01 level of significance. It implies that there exists significant difference in the mean scores of Attitude towards Environment of Boys and Girls at Secondary level. The mean value shows that the mean value of Attitude towards Environment of girls ($M = 97.64$) is higher than that of boys ($M = 93.76$). **Hence it can be concluded that the girls possess significantly higher Attitude towards Environment than boys.** The comparison of mean scores of Environmental Awareness and Attitude towards Environment is clearly depicted in following figure:

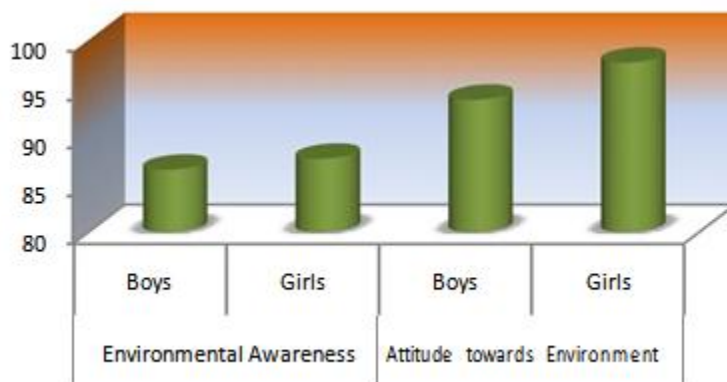


Fig: 2 Graphical representation of mean scores based on gender

Based on type of Management of School.

Variables	Type management	of N	Mean	SD	T
Environmental Awareness	Private	306	87.54	10.18	1.12 p >0 .05
	Government	384	86.66	10.23	
Attitude towards Environment	Private	306	98.61	11.41	5.72 p < 0.01
	Government	384	93.46	12.04	

Tab 3. Test of significance of difference based on type of management of school

From Table 3, it is clear that the obtained ‘t’ value ($t = 1.12, p > 0.05$) for Environmental Awareness is not significant. It implies that there exists no significant difference in the mean scores of Environmental Awareness of Students at Secondary level from unaided and Government schools. **It can be concluded that the Private and Government school students possess comparatively same Environmental Awareness.** Table 3 also shows that the obtained ‘t’ value ($t = 5.72, p < 0.01$) for Attitude towards Environment is significant at 0.01 level of significance. It implies that there exists significant difference in the mean scores of Attitude towards Environment of unaided and Government students at Secondary level. The mean value shows that the mean value of Attitude towards Environment of unaided school students ($M = 98.61$) is comparatively higher than that of Government School Students ($M = 93.46$).

Hence it can be concluded that the Private School Students possess significantly higher Attitude towards Environment than Government School Students. The comparison of mean scores of Environmental Awareness and Attitude towards Environment is clearly depicted in following figure:

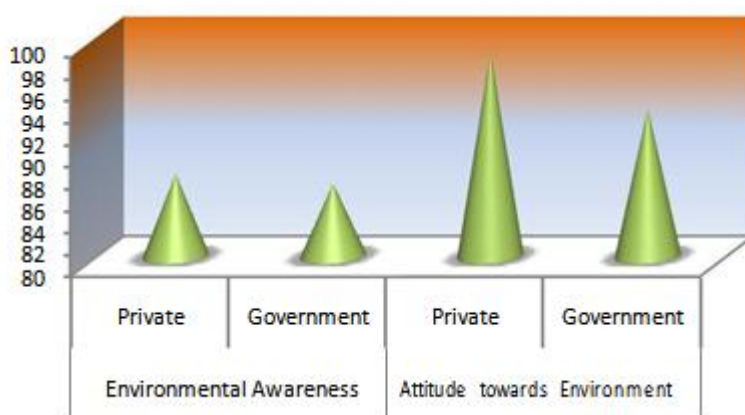


Fig: 3 Graphical representation of mean scores based on type of management

Based on the State (Kerala and Tamil Nadu)

The details of result of test of significance of difference between means of Environmental Awareness and Attitude towards Environment based on the state where the samples belong to is given in following table.

Variables	State	N	Mean	SD	T
Environmental Awareness	Tamil Nadu	300	83.82	10.49	7.48
	Kerala	390	89.54	9.27	
Attitude towards Environment	Tamil Nadu	300	96.31	11.82	1.08
	Kerala	390	95.31	12.20	

Tab 4. Test of significance of difference based on the state where the samples belong to

From Table 4, it is clear that the obtained 't' value ($t = 7.47, p < 0.01$) for Environmental Awareness is significant at 0.01 level of significance. It implies that there exists significant difference in the mean scores of Environmental Awareness of Students at Secondary level from Kerala and Tamil Nadu state. The mean scores revealed that the mean scores of Environmental Awareness of Secondary School Students from Tamil Nadu ($M = 83.83$) is comparatively less than that of students from Kerala ($M = 89.54$). It can be concluded that the Secondary School Students from Kerala state possess comparatively higher Environmental Awareness than that from Tamil Nadu. Table 4 also shows that the obtained t value ($t = 1.08, p > 0.05$) for Attitude towards Environment is not significant at 0.05 level of significance. It implies that there exists no significant difference in the mean scores of Attitude towards Environment of Secondary School Students from Kerala and Tamil Nadu state. It can be concluded that the Secondary School Students from Kerala and Tamil Nadu possess comparatively same Attitude towards Environment. The comparison of mean scores of Environmental Awareness and Attitude towards Environment of Secondary School Students from Kerala and Tamil Nadu state is clearly depicted in below Figure.

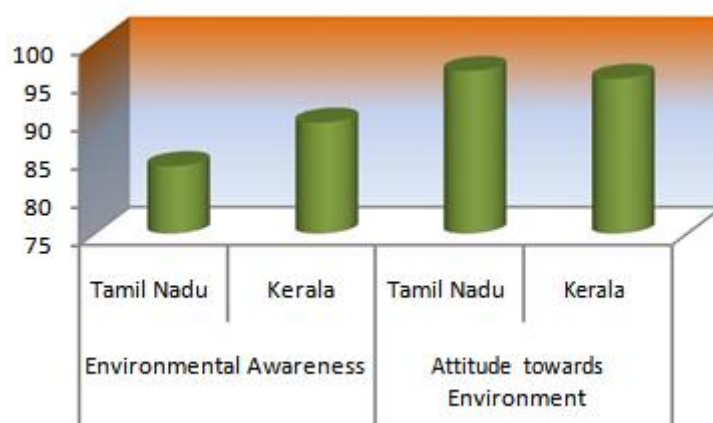


Fig: 4. Graphical representation of mean scores based on the state they belong to

Comparison of Attitude towards Environment Based on the Level of Environmental Awareness

The researcher compared the mean scores of Attitude towards Environment among Secondary School Students based on high, average and low levels of Environmental Awareness by using one-way ANOVA. The summary of one-way ANOVA is given in following table.

Variables	Level	N	Mean	SD	F	Scheffe's F
Attitude towards Environment	Low	172	87.61	11.87		L & A 8.49*
	Average	359	95.98	10.36	98.74	A & H 7.94*
	High	159	104.02	9.76		L & H 14.03*

* L - Low; A - Average, H - High

Tab 5. Summary of One Way ANOVA for Attitude towards Environment based on level of Environmental Awareness

From Table 5, the obtained F ($F = 98.74, df (2,687), p < 0.01$) is significant at 0.01 level. **Hence it can be concluded that there exists significant difference in the mean scores of Attitude towards Environment based on high, average and low levels of Environmental Awareness.** Since the analysis of Variance shows a significant difference in the mean scores of Attitude towards Environment based on high, average and low levels of Environmental Awareness among Secondary School Students, it is necessary for a post-Hoc Analysis. The investigator proceeds with Scheffe's Test (Gay, 1996) and the same has been reflected in Table 5. It is clear from Table 5 that all the pairs of levels of Environmental Awareness possess significant difference in the mean scores of Environmental Awareness among Secondary School Students. The mean values revealed that the mean scores of Attitude towards Environment among Secondary school Students having high Environmental

Awareness (M = 104.02) is comparatively higher than that of students having average Environmental Awareness (M = 95.98) and low Environmental Awareness (M = 87.61). The comparison of Attitude towards Environment among Secondary School Students having high, average and low Environmental Awareness is given in below figure:

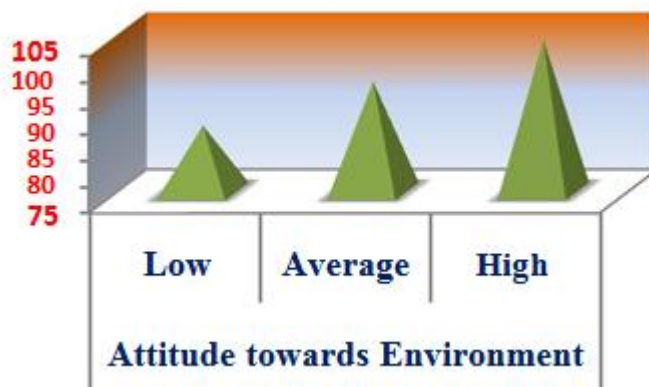


Fig: 5. Graphical representation of mean scores of Attitude towards Environment students having high, average and low levels of Environmental Awareness

Relationship between Environmental Awareness and Attitude towards Environment among Secondary School Students

The summary of Coefficient of Correlation between Environmental Awareness and Attitude towards Environment is given in following table:

Variables	N	Coefficient of Correlation	of Shared Variance
Environmental Awareness and Attitude towards Environment	690	0.52	27.04

Tab 6. Summary of Coefficient of Correlation between Environmental Awareness and Attitude towards Environment

From Table 6, it is clear that the obtained coefficient of correlation ($r = 0.52, p < 0.01$) is significant at 0.01 level of significance. **Hence, it can be concluded that there exists significant positive relationship between Environmental Awareness and Attitude towards Environment among Secondary School Students.** The value of shared variance (SV=27.04) indicates that 27.04 percent of Attitude towards Environment among Secondary School Students is determined by their Environmental Awareness.

V. SUMMARY OF MAJOR FINDINGS

Though numerous studies have been undertaken in the related subjects i.e environment awareness of secondary school students and their attitude towards environment, however, no research has been made to compare two states viz., Tamilnadu and Kerala that share common traditions, customs and belief.

Environmental Awareness

The findings of the study show that there is similarity in the level of environmental awareness of secondary school students in Tamilnadu and Kerala. It can be concluded that Boys and Girls at Secondary School level possess comparatively same Environmental Awareness. It can be argued that the level of awareness of secondary school students in different divides like Government and Private Schools is least or not affected by the type of management at all. It is thus clear indication that secondary school students in both Private and Government management in both these states are exposed to the same type of curriculum and as a result of the coverage, eventual level of environmental awareness among the students are high average. It can also be concluded that the Secondary School Students from Kerala state possess comparatively higher Environmental Awareness than that of Tamil Nadu students.

Attitudes towards Environment

The study found out that on a general note the attitude of students towards the environment is very positive. From the responses obtained from the study, it was noted that majority of the students exhibited a high level of positive attitude. Through this study, the researcher could discern that every student wishes to see a conserved and well taken care of environment for their future. This finding was so vivid even after majority of students indicated that they can do something to make the environment better.

On a general note, the study through calculation of Analysis of Variance found out that the Secondary School Students from Kerala and Tamil Nadu possess comparatively similar level of Attitude towards Environment. Looking at the 'P' values obtained by calculating Analysis of Variance (ANOVA), this study reveals that higher the level of awareness of secondary school students, higher the level of their attitude towards environment. Based on the test results, it can be concluded that the girls possess significantly higher Attitude towards Environment than boys. Also, it can be concluded that the Private School Students possess significantly higher Attitude towards Environment than Government School Students. This result of the study can be argued from the fact that the students in privately managed schools might have been exposed towards higher level of environmental participation and such activities might have been the reason for such differentiation in test results.

VI. ADDITIONAL FINDINGS ON GENDER COMPARISON

A total of 690 questionnaires were filled and returned. From the questionnaires returned, 328 were from Tamilnadu consisting 47.54% of the total respondents while 362 were from Kerala consisting 52.46 % of the study population. From the above details, it was also found out that there were more male respondents compared to female respondents. In Tamilnadu, 53.6% of the respondents were male while 46.4% were female while in Kerala 59.7% were male while 40.3% were female.

It can be suggested that there are more boys than girls in secondary schools in Tamilnadu than in Kerala State which reflects comparatively little higher gender parity in Kerala compared to that in Tamilnadu. In Kerala, female respondents constituted 40.3% (*with respect to 59.7% boys*) of the population compared to 46.4% (*with respect to 53.6% boys*) in Tamilnadu.

VII. CONCLUSION

It is found from the study that the quality of the current environmental education system in India is remarkably good, while in some areas the system of environmental education requires improvement. Various researches have revealed that environmental education contribute to the development of environmental awareness and thereby developing favourable attitudes towards the environment. This study confirms the same belief that higher the level of environmental awareness, higher the attitude towards environment.

SUGGESTIONS

- [1] The curriculum on environmental awareness level needs to be intensified with more study hours allotted to the subject.
- [2] The policy makers and the school management need to emphasize on organized participation of students on various environmental activities like nature visits, nature camps etc.
- [3] Schools need to conduct regular in-house activities like school cleanliness day, debates on burning environmental issues, extempore/impromptu speeches, quiz, painting/poster making, formation of environmental clubs etc.,

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