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Awareness towards Environmental Pollution and Academic Achievement among Secondary Level Students in Purba Bardhaman District of West Bengal, India

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A R T I C L E I N F O

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A B S T R A C T

The main purposes of the study were to elucidate the levels of awareness towards environmental pollution and academic achievement and to investigate the relationship between awareness towards environmental pollution and academic achievement, the factors that affect awareness towards environmental pollution was determined. Awareness towards environmental pollution measuring questionnaires were done with 188 secondary levels students of Bardhaman district. For the analysis of data, Mean, S.D., 't' test, ANOVA, and graph have been applied in itself. The moderate level of awareness towards environmental pollution and academic achievement both have been observed in present study. It is revealed that the Girls and Urban students were comparatively more aware towards environmental pollution than Boys and Rural. Non-minority students were comparatively more aware towards environmental pollution than Minority. Through the present study, it was also found that there is no significantly difference among various part of Parent's Occupation, Family's Economical Status and Categories. But on the basis of mean scores, Sons of Serviceman, Rich Family and Unreserved category are more aware towards Environmental Pollution than others.

INTRODUCTION

Today, each people and Animal were dwelling with risk because of environmental pollutants and the primary cause for these pollutants is over populace, greed and the subconscious mind-set of people closer to environment (Dhayalan and Joseph 2019). The human beings commenced draining the encompassing assets on one aspect in addition to on the alternative growing pollutants on earth which affecting the stability of ecological within side the atmosphere of earth. Undesirable alternate with inside the physical, chemical, or organic traits of the air, water, or land which can harmfully have an effect on fitness, survival, or sports of human beings or different dwelling organisms, that's Pollution (Subramanian and Shanthini 2019). The people started draining the surrounding resources on one side as well as on the other creating pollution on the earth which affecting the stability of ecological within side the atmosphere of earth (Poonam, 2013). The environmental imbalance gives rise to severa environmental problems. Some environmental troubles are pollutants, soil erosion main to floods, salt deserts and sea recedes, desertification, landslides, alternate of river directions, extinction of species, and inclined environment in vicinity of extra complicated and solid ecosystems, depletion of herbal resources, waste accumulation, deforestation, thinning of ozone layer and international warming. Rapid migration and growth in populace with inside the city regions has additionally cause visitors congestion, water shortages, stable waste, and air, water pollutants are not unusual place important troubles in nearly all of the city regions considering the fact that previous few years. Over the closing 3 many years there was growing international situation over the general public fitness affects attributed to environmental pollutants.

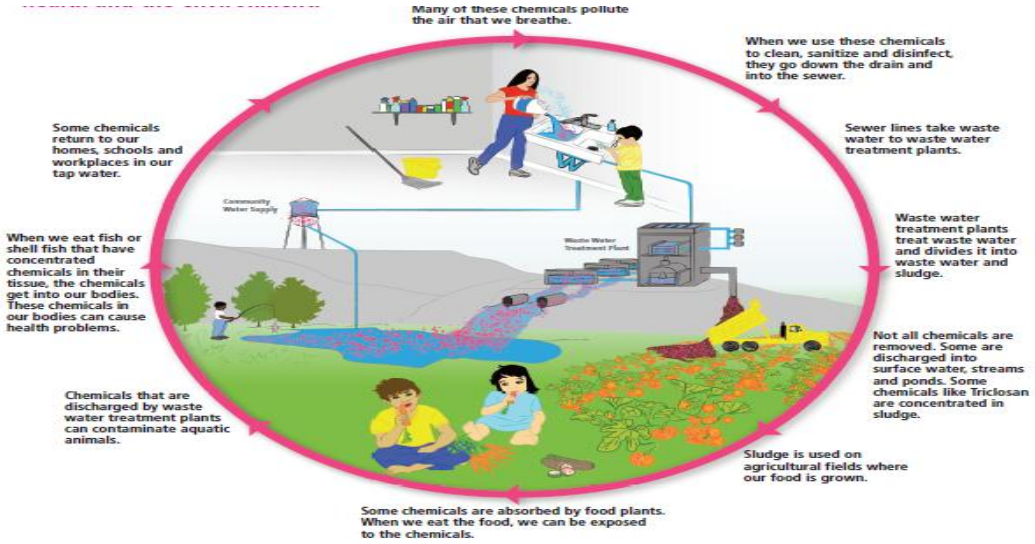
Table 1. Environmental Pollutants

Dimension	Air Pollution	Water Pollution	Soil Pollution
Causes	Nitrogen Oxides, carbon monoxide, Sulper-di-oxide, pen to -chemical-oxidants and hydrocarbons etc. Sources: Industries, motor vehicles, aero planes, Volcanoes, dust storms, forest fires and pollution from trees.	Synthetic organic compounds like pesticides, detergents, sediments, radio-active substances, thermal discharges, oil etc. use in water.	Human excreta, industrial waste, sterilizers, pesticides, polythene products, nuclear waste etc. gather on soil.
Effect	Temperature increase, Change weather, Genetic mutations, Health problems etc.	Affect on aquatic life, Food chain and Contract diseases etc.	Reduce N-fixation, Fertility, crop yield, health crisis etc.

The cycle of environmental pollution

We are belonging in a cycle of ecosystem. We have different types of work in daily life for survival. Many times these work helps to environmental pollution directly or indirectly by the tasks.

Figure 1. Some Daily Life Activities of an Individual



LITERATURE REVIEW

Astalin, P. (2012) has concluded that an advantageous relation among environmental consciousness and consciousness in the direction of social responsibility of better secondary faculty college students has been confirmed. It means that students are more aware with inside the path of conscious in the direction of environmental consciousness, with higher consciousness in the direction of social responsibility. Adejoke, et al. (2014), their look at have inferred that Awareness and Attitude in the direction of Environmental Pollution of college students and teachers have became now no longer a obsession on the premise of gender. On the opposite sides, it became in variance with research locating girls with better ranges than males. Sahayaselvi. S. (2015) had showed that the attention ranges in the direction of pollutants of human beings in Kanyakumari District are tremendous and the pollutants likes water, air, plastic, soil and so on conscious via way of means of them. Mihanpour H. et al. (2018), their gift look at, there has been no big courting among gender, schooling degree, marital repute, region of residence, consciousness degree and mindset ranges in addition to The consciousness rating became statistically big when it comes to the age, schooling degree and employment repute variables. Yunus, et al. (2019), their look at found out that the effectiveness of those factors consisting of mindset, behaviour, demographics and perception. Overall, schooling is critical to growing the knowledge, mindset; behaviour and exercise among human beings to transport ahead to shield the surroundings. Srividhya and Malathy, (2019) of their look at in Coimbatore district has inferred that there may be a distinction in regard to the extent of consciousness on environmental pollutants among B.Ed scholar

teachers. Thomas, G. K., et al. (2020) confirmed of their research that there exist an advantageous correlation among surroundings consciousness and mindset in the direction of environmental pollutants. Rahmani, H. (2021) in his look at indicates that slight percentage of members remembers public consciousness and much less of slight percentage suppose that enforcement of environmental legal guidelines is critical.

METHODOLOGY

The nature of the present study is a descriptive kind. The researcher has used the survey method of Descriptive type in the present study. The researcher has selected among 188 Secondary levels Students in Purba Bardhaman district of west Bengal as a sample for the present study. The Simple Random sampling technique has been applied in the selection of the sample. The researcher has applied Awareness Scale as a research tool for collecting the data in the present study. On the basis of current situation, the researcher himself constructed a self-made Questionnaire which consists of 21 (twenty-one) questions related to their Awareness towards Environmental Pollution. The Inventory consisted of 21 Items (19 Items are Positive and 2 Items are Negative). The Inventory was constructed on the basis of Likert's four Point Scale i.e. Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The value of the reliability with split-half of the present research tool was 0.84 which indicates that the tool was highly reliable. And in case of measuring the validity of the tools, the Expert Judgment Method was applied by the researcher in order to measure the validity of the tool. The present researcher has used SPSS (Version-20) followed by the techniques which are mentioned below to analysis the data: Mean; S.D.; 't'-Test; ANOVA and Graphs.

RESULTS AND DISCUSSION

$H0_1$: There would not have high favorable level of Awareness towards Environmental Pollution among Secondary Level Students in Purba Bardhaman District.

Analysis of Awareness towards Environmental Pollution among Secondary Level Students on the basis of cut off point

Table 1. Shows the Number, Mean and S.D of Total Secondary Level Students

Group	Number	Mean	Std. Deviation
Students	188	69.46	6.10

$$M \pm \sigma$$

$$M + \sigma = 69.46 + 6.10 = 75.56$$

$$M - \sigma = 69.46 - 6.10 = 63.36$$

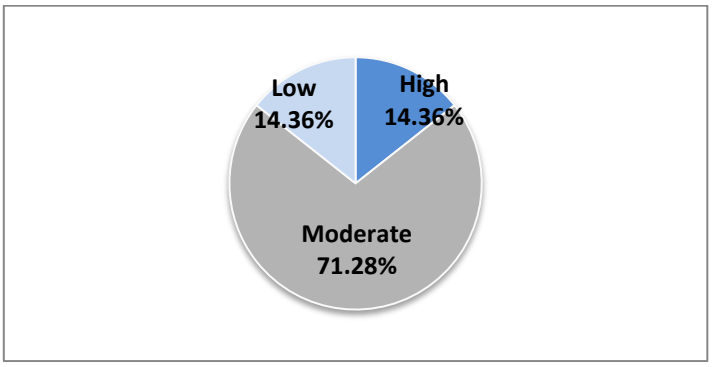
Table 2. Show the level of Awareness towards Environmental Pollution on basis of Cut off point

Scores	Frequency	Percentage	Level of Awareness
Above-**75.56**	27	14.36	High
Between-**63.36** to **75.56**	134	71.28	Moderate
Below- **63.36**	27	14.36	Low
Total	188	100	

Testing of *H01* and Interpretation:

From the *Table.2* , On the basis of Cut off Point, we can see that out of the total 188 Secondary level Students, 14.36% Students have scored Above 75.56, 71.28% Secondary level Students have scored Between 63.36 to 75.56 and 14.36% Secondary level Students have scored Below 63.36. As a result, it can be said that the maximum percentage 71.28% Secondary level Students has scored Between 63.36 to 75.56, which shows that the level of Awareness towards Environmental Pollution among Secondary Level Students is being Moderate in Purba Bardhaman district.

Figure 2. Graphical Representation of Awareness Towards Environmental Pollution Among Secondary Level Students on basis of Cut off Point



Analysis of Academic Achievement among Secondary Level Students on the basis of cut off point

Table 3. Shows the Number, Mean and S.D of Total Secondary Level Students

Group	Number	Mean	Std. Deviation
Students	188	68.99	12.07

$$M \pm \sigma$$
$$M + \sigma = 68.99 + 12.07 = 81.06$$
$$M - \sigma = 68.99 - 12.07 = 56.92$$

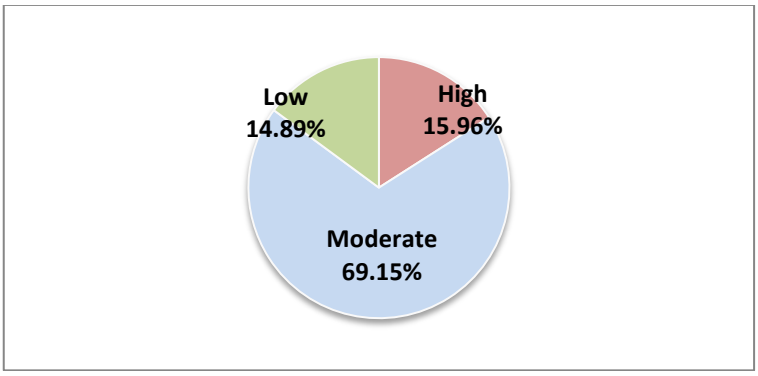
Table 4. Show the level of Academic Achievement on basis of Cut off Point

Scores	Frequency	Percentage	Level of Awareness
Above-**81.06**	30	15.96	High
Between-**56.92** to **81.06**	130	69.15	Moderate
Below- **56.92**	28	14.89	Low
Total	188	100	

Testing of *H02* and Interpretation:

From the Table. 4, On the basis of Cut off Point, we can see that out of the total 188 Secondary level Students, 15.96% Students have scored Above 81.06, 69.15% Secondary level Students have scored Between 56.92 to 69.15 and 14.89% Secondary level Students have scored Below 56.92. As a result, it can be said that the maximum percentage 69.15% Secondary level Students has scored Between 56.92 to 69.15, which shows that the level of of Academic Achievement among Secondary Level Students is being Moderate in Purba Bardhaman district.

Figure 3. Graphical representation of Academic Achievement among Secondary Level Students on basis of Cut off point



H0₃: There is no significant relation between Awareness towards Environmental Pollution and Academic Achievement among Secondary Level Students in Purba Bardhaman District.

Table 5. Shows the Relationship between Awareness towards Environmental Pollution and Academic Achievement

Variables		**Value of Correlation (r)**	**Result**	**Interpretation**
Independent	**Dependent**			
Awareness towards Environmental Pollution	Academic Achievement	**0.33****	**S**	*Low Positive Correlation*

*** Significant at 0.01 [Table Value of 'r' against df-186 at 0.01 levels is 0.181]*

In *Table 5*, it is found that the calculated value of 'r' that is **0.33** is significant at 0.01 level of significance. So, it is a significant relationship between Awareness towards Environmental Pollution and Academic Achievement. The 'r'-value shows a Low Positive Correlation between Awareness towards Environmental Pollution and Academic Achievement**.** Hence, the null hypothesis is rejected and it can be said that when one's Awareness towards Environmental Pollution increased, Academic Achievement of that student will be increased.

Table 6. Results of t-Test between different groups of Secondary Level Students with regard to Awareness towards Environmental Pollution

Variables	Groups	N	Mean	S.D	Mean Difference	S_{ED}	df	t-value	Result
Gender	Boys	49	68.73	6.396	-0.985	1.014	186	0.971	@
	Girls	139	69.72	5.999					
Residence	Rural	107	69.44	5.702	.032	.901	186	.036	@
	Urban	81	69.48	6.631					
Community	Non-Minority	149	70.21	6.163	3.593	1.07	186	3.362	**
	Minority	39	66.62	4.987					

*Not Significant and ** Significant [Table Value of't' against df-186 at 0.05 level and 0.01 level is 1.97 and 2.60 respectively]*

Testing of *H04* and Interpretation:

From *Table 6,* it is found that the calculated 't'-value **(0.971)** is less than the table value at the 0.05 level of significance (1.97) and the null hypothesis is accepted. Therefore, the result is insignificant and it indicates that there is no significant difference between Boys and Girls Secondary levels Students with respect to their Awareness towards Environmental Pollution.

Testing of *H05* and Interpretation:

From *Table 6,* it is found that the calculated 't'-value **(0.036)** is less than the table value at the 0.05 level of significance (1.97) and the null hypothesis is accepted. Therefore, the result is insignificant and it indicates that there is no significant difference between Rural and Urban Secondary levels Students with respect to their Awareness towards Environmental Pollution.

Testing of *H06* and Interpretation:

From *Table 6,* it is found that the calculated 't'-value **(3.362)** is greater than the table value at the 0.05 level of significance (1.97) and the null hypothesis is rejected. Therefore, the result is significant and it indicates that there is a significant difference between Minority and Non-Minority Secondary levels Students with respect to their Awareness towards Environmental Pollution.

Table 9. Shows the Number, Mean and S.D of Secondary Level Students of difference groups on the basis of Parent's Occupation in respect to their Awareness towards Environmental Pollution.

Aspects	Group/Variable	N	Mean	S.D
Parent's Occupation	Farmer	76	69.07	6.58
	Business	68	69.28	5.12
	Service	44	70.43	6.15
Family's Status	Rich	65	70.25	5.71
	Middle	90	69.70	5.52
	Poor	33	67.27	7.84
Caste	U.R	56	71.21	6.321
	OBC	89	68.56	6.015
	SC	34	69.41	5.785
	ST	9	69.46	6.103

Table 10: Shows the results of ANOVA on different groups Secondary Level Students in respect to their Awareness towards Environmental Pollution.

aspects of	**Sum of Squares**		**Mean Square**		**F-value**
	Between Groups	**Within Groups**	**Between Groups**	**Within Groups**	
Parent's Occupation	**55.582**	**6964.739**	**27.791**	**37.347**	**0.744@**
Family's Status	**203.232**	**6761.507**	**101.616**	**36.549**	**2.780**
Category	**273.165**	**6691.574**	**91.055**	**36.367**	**2.504**

Not Significant [Table Value of 'F' against df-2/185 at 0.05level is 3.04]

Testing of *H07* and Interpretation:

From *Table 10*, it is found that the calculated 'F'-ratio is **0.744** which is less than the table value at 0.05 levels of significance (3.04). So, the result is insignificant and we can conclude that there is no significant difference among the Secondary level Students with respect to their Awareness towards Environmental Pollution on the basis of Parent's Occupation.

Testing of *H08* and Interpretation:

From *Table 10*, it is found that the calculated 'F'-ratio is **2.780** which is less than the table value at 0.05 levels of significance (3.04). So, the result is insignificant and we can conclude that there is no significant difference among the Secondary level Students with respect to their Awareness towards Environmental Pollution on the basis of Family's Economical Status.

Testing of *H06* and Interpretation:

From *Table10*, it is found that the calculated 'F'-ratio is **2.504** which is less than the table value at 0.05 levels of significance (3.04). So, the result is insignificant and we can conclude that there is no significant difference among the Secondary level Students with respect to their Awareness towards Environmental Pollution on the basis of Categories.

CONCLUSIONS AND RECOMMENDATIONS

This study conducted the Awareness towards Environmental Pollution and Academic Achievement of Secondary levels Students of Purba Bardhaman district in West Bengal, India. Pollution was compacted with in mainly water, air and soil pollution. The analysis of the study explored that the both levels of Awareness towards Environmental Pollution and Academic Achievement of Secondary levels Students of Purba Bardhaman district is moderate. Relationship between Awareness towards Environmental Pollution and Academic Achievement shows a Low Positive Correlation**.** Hence, it can be said that when one's Awareness towards Environmental Pollution increased, Academic Achievement of that student will be increased. Among the pollution categories, people were mostly aware of the pollution in air. Gender and Locality is a not significant factor affecting the awareness towards environmental pollution secondary levels students. Girls Urban Students are more aware than males and rural students on the basis of mean scores respectively. On the basis of community, it indicates that there is a significant difference between Minority and Non-Minority. Non-Minority Students are more Aware towards Environmental Pollution than Minority. On the basis of Parent's Occupation, Family's Economical Status and Categories, the result is insignificant difference among various aspects of variables respectively with respect to their Awareness towards Environmental Pollution. But on the basis of mean scores, Sons of Serviceman, Rich Family and Unreserved category are more aware towards Environmental Pollution than others.

The information found from this study is not static, but with time and environment changes, people's attitude and awareness to the environment will

also change. However, we have to be a lot more conscious about the environment and have positive attitude to the environment. Only then our current world and current life will live longer. As well as it suggested the government and institutions should take policies and action plan to protect environment.

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