

An Analysis of Environmental Awareness of Generation Z University Students in the City of Hyderabad

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Abstract:

A developing nation like India is increasingly concerned about the state of the environment. Various initiatives are being used to raise awareness of how corporate and non-corporate operations affect the environment. It has been acknowledged that environmental awareness, which can result from environmental education/knowledge, can support the shift to more sustainable societies and healthy living while also serving as a solid basis for future environmental responsiveness. The current study examined the levels of environmental awareness, which encompasses knowledge, attitudes, and behaviour toward the environment, among 210 Generation Z college students, 108 of whom were male and 102 female, aged 16 to 26. This study aimed to determine the Generation Z university students' degree of understanding of the environment by evaluating their awareness of sources of pollution information, activities that cause pollution, the impact of pollution on wealth, safety and wealth and primary sources of environmental pollution.

To gather information on environmental awareness, a Google Form was used to develop a structured questionnaire that was given to graduate and undergraduate students at three distinct universities in Hyderabad: GITAM University, Osmania University, and University of Hyderabad. The data has been analysed using SPSS software. Generation Z University students at Hyderabad are moderately aware of the environment. 66.7% of them get their information about pollution from the internet; 74.8 percent of them believe that pollution is more harmful to health than to safety or wealth; 67.2 percent of all activities result in pollution, more than any other; and 72.9 percent of environmental pollution is caused by water pollution.

Key Words: Generation Z, Environmental Awareness, University Students,

Introduction:

Environmentally conscious people grow to be sensitive to and knowledgeable about their natural surroundings. This entails people realising that it is their duty to lower the danger of environmental harm and use natural resources more sustainably. It's a notion employed to appreciate the significance of environmental preservation. Global environmental issues are always accompanied by calamities (Jusoh et al., 2018). These tragedies include things like biodiversity loss, water pollution, and environmental contamination. Raising societal knowledge of environmental issues is essential for raising the standard of living (Ahmad et al., 2011).

Environmental degradation through various causes has been a recent worry for various players in society and society. Efforts are being made to reduce the degradation rate, if not entirely halt it. These programs include advertisements and seminars to increase awareness among various segments of society.

The quality of the environment is said to have dropped dramatically and at an alarming rate. The state of the air, water, and soil has deteriorated; pollution in the ocean has grown; species extinctions are occurring; biodiversity is disappearing; and more frequent and intense natural disasters are resulting in a rising death toll and destruction of property. [Singh R, Abbas MY, 2014]

It is commonly known that environmental education results in environmental literacy, which lays the groundwork for future environmental responsiveness while assisting us in transitioning to healthier lifestyles and more sustainable civilisations. Economic and environmental sustainability can be attained by changes in consumption patterns and lifestyle choices that support environmental and human health development. [Biswas A., 2020]

There have been numerous national and international seminars and workshops where the benefits of environmental education have been highlighted. Raising people's knowledge of the environment and its problems, as well as their commitment to working individually and collectively to address present problems and stop the creation of new ones, is the primary goal of environmental education. Citizens informed about the environment will be the end outcome of this.

The challenging goal of environmental literacy is the outcome of environmental education. It is the capacity to make informed choices in day-to-day living based on a deep understanding of individuals' and communities' interactions with one another, with natural systems, and with the potential to do so sustainably. As a result, to participate in both individual and group action as well as to incorporate relevant environmental issues into daily decisions about consumption, lifestyle, job, and civics, one must possess the necessary awareness, information, skills, and attitudes.[Elder JL. A. Field, 2021]

Previous research has shown significant gaps in the public's knowledge and awareness of environmental issues (Singh A, Kumari S, Singh J 2014, Gopinath G. 2014). The creation of environmental policy is being hampered by the public's lack of environmental literacy.[Burchett JH, 2015] This is because there is evidence linking the people's level of environmental awareness and care to their willingness and ability to engage in developing public policies that enhance environmental quality.[Burchett JH, 2015]

Therefore, achieving environmental sustainability now depends on environmental education, public awareness, and involvement in environmental protection. As a result, this study aimed to determine the Generation Z university student's understanding of the environment by evaluating their awareness of sources of pollution information, activities that cause pollution, the impact of pollution on health, safety and wealth and significant sources of environmental pollution.

Research Methodology

The current cross-sectional study was conducted among Generation Z undergraduate and graduate students in Hyderabad, Telangana. The data was obtained from different disciplines, such as Arts, Commerce, Business Management, engineering, etc., which are home to Generation Z students. In this study, individuals' environmental awareness was examined.

The sample size can be calculated at a certain confidence level with a tolerable margin of error using the standard deviation value (Oguz and Karakayaci, 2017). The sample size was determined with a precision of 7% and a 95% confidence interval of 196, assuming a 50% estimated prevalence. Using the simple random sampling method, data from 210 students was collected during the study. It was decided that administering the questionnaire in English was appropriate because English serves as the medium of instruction for all of the courses.

The investigator visited the campuses of three universities (GITAM deemed to be the University, Osmania University, and the University of Hyderabad) and provided each student with the Google form link that I came across. I then requested the

students to complete the form and submit it online. Students are sampled at random from wherever they are found from different universities.

The questionnaire contains 28 questions divided into five sections, which were created and modified from the ones used in previous studies. Section 1 consists of general information about respondents consisting of three (3) questions relating to age, sex, and program of study. The second section relates to sources of environmental information and consists of seven (7) questions concerning TV, radio, newspaper, internet, environmental groups, government agencies, and friends/colleagues. Section three (3) consists of understanding various actions that cause environmental pollution, comprising ten questions. Section 4 consists of understanding the impact of pollution and three (3) questions on health, safety, and wealth. Lastly, section 5 relates to understanding the various types of environmental pollution and consists of 5 questions.

Section	Description of the section	No of questions
1	General information about the respondent	3
2	Understanding about sources of environmental pollution information	7
3	Understanding various actions that cause environmental pollution	10
4	Understanding the impact of pollution on health, safety, and wealth	3
5	Understanding about various types of environmental pollution	5

Except for the demographic section, in the remaining sections, a 5-point Likert scale was used and asked the students to select one of the five choices ranging from 1 to 5 as 1 = no, 2 = low, 3 – medium, 4 = high and 5 = very high. In some cases, students were asked to select any of the five choices ranging from strongly disagree to agree strongly.

A pilot study with 100 participants was conducted to validate the questionnaire, and Cronbach's alpha was 0.881.

Reliability of the questionnaire:

The acceptability and reliability of the scales have been tested through the technique of Cronbach's Alpha coefficient, and it is shown as 0.930, which is more than the desired level of 0.60 (Guris and Aster (2015)). The reliability scale for sources of environmental pollution information is 0.783, causes of environmental pollution 0.958, impact of pollution 0.819, and for different types of environmental pollution is 0.907.

Reliability Statistics of all the variables that have been selected for the study

Cronbach's Alpha	N of Items
.930	25

Section	Description of the section	No of questions	Cronbach's Alpha
1	Understanding about sources of environmental pollution information	7	0.783
2	Understanding various actions that cause environmental pollution	10	0.958
3	Understanding about the effect of pollution on health, safety and wealth	3	0.819
4	Understanding about various categories of environmental pollution	5	0.907

Therefore, the Cronbach's Alpha values for each section of questions for all four sections show very clearly that the reliability of the questions is high, ranging from 0.783 to 0.958, and the overall reliability is 0.930, whereas the minimum is 0.60.

Data Presentation and Analysis

Table 1: Age group analysis

	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid 16 to 20	111	52.9	52.9	52.9
21 to 25	99	47.1	47.1	100
Total	210	100.0	100.0	

Based on the analysis, 52.9% of the students (111) are in the age group of 16 to 20 years, and the remaining are in the age group of 21 to 25.

Table 2: Analysis of gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	102	48.6	48.6	48.6
Male	108	51.4	51.4	100.0
Total	210	100.0	100.0	

Out of the total respondents, 51.4% (108) are male, and the remaining 48.6% are females. The gap is very narrow between male and female respondents. In general, it is observed that the number of female students is increasing in every program compared to previous years.

Table 3: Analysis of the current program of study

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid B.Com	64	30.5	30.5	30.5
BBA	37	17.6	17.6	48.1
BA	1	.5	.5	48.6
BE/ B.Tec.	75	35.7	35.7	84.3
Other UG	5	2.4	2.4	86.7
MBA	27	12.9	12.9	99.5
Other PG	1	.5	.5	100.0
Total	210	100.0	100.0	

Most of the respondents are from engineering backgrounds, 35.7% (75); next is the commerce background, 30.5% (64). Out of the total respondents, PGs (MBA) comprise 12.9% (27), and the remaining are from undergraduate programs, which include B.Com., BBA, BA and BE/B.Tec., 87.1% (183)

Table 4: Analysis of Understanding about sources of environmental pollution information

Analysis of Understanding about sources of environmental pollution information					
	Not heard	Very little heard	Moderately heard	Highly heard	Very highly heard
Television	16 (7.6%)	46 (21.9%)	70 (33.3%)	57 (26.7%)	22 (10.5%)
Radio	85 (40.5%)	50 (23.8%)	50 (23.8%)	18 (8.6%)	7 (3.3%)
Newspaper	23 (11%)	31 (14.8%)	69 (32.9%)	50 (23.8%)	37 (17.6%)
Internet	9 (4.3%)	12 (5.7%)	49 (23.3%)	67 (31.9%)	73 (34.8%)
Environmental Groups	40(19%)	37 (17.6%)	72 (34.3%)	40 (19%)	21 (10%)
Government agency information	37 (17.6%)	47 (22.4%)	74 (35.2%)	42 (20%)	10 (4.8%)
Friends and colleagues	28 (13.3%)	50 (23.8%)	66 (31.4%)	39 (18.6%)	27 (12.9%)

On analysing the understanding of sources of pollution information, only 37.2% (79) highly heard and very highly heard from TV as a source of pollution information, 64.3% (135) have indicated that they have not heard or very little heard from radio. This shows that nowadays, radios as a means of providing information are getting reduced because their usage has declined drastically in the last two decades as TV use has increased. Regarding newspapers, 41.4% (87) indicated that they highly and very highly heard pollution information from newspapers. Still, closely 25.8% (54) indicated that they had not heard or very little heard from newspapers. 66.7% (140) have indicated that they have gained environmental awareness through the Internet. Regarding the environmental groups, only 29% (61) of the respondents stated that they were aware of the pollution information from those groups. This shows that these groups are not very active in publicising the pollution information. 24.8% (52) respondents indicated that they could hear about the environment from government agency information centres. Only 31.5%(56) indicated that they were aware of environmental information from friends and relatives. The entire analysis shows that the internet and environmental groups are the major sources of awareness about environmental information, and the remaining sources have less of a role.

Table 5: Analysis of understanding about the effect of pollution on health, safety and wealth.

Analysis of Understanding about the effect of pollution on health, safety and wealth					
	St disagree	Disagree	Neutral	Agree	St agree
Health	12 (5.7%)	11 (5.2%)	30 (14.3%)	71 (33.8%)	86 (41%)
Safety	10 (4.8%)	14 (6.7%)	58 (27.6%)	76 (36.2%)	52 (24.8%)
Wealth	11 (5.2%)	21 (10%)	75 (35.7%)	70 (33.3%)	33 (15.7%)

On analysing the awareness of the influence of environmental pollution on health, safety, and prosperity (wealth), Of those surveyed, 74.8% (157) strongly agreed that environmental pollution has an impact on health. 61% (128) indicated that they are aware of the impact of pollution on safety, and only 49% (103) respondents are aware that environmental pollution affects wealth. Hence, the majority of respondents are not aware of the impact of pollution on wealth, but the majority are aware of the impact of pollution on health and safety.

Table 6: Analysis of awareness of various actions that cause environmental pollution

Analysis of awareness of various actions that cause environmental pollution						
	Not concerned	Little concerned	Neutral	Concerned	Highly concerned	Total of concerned and

						highly concerned.
Industrial activities	16 (7.6%)	7 (3.3%)	58 (27.6%)	41 (19.5%)	88 (41.9%)	61.4% Rank 3
Dumping solid waste	7 (3.3%)	20 (9.5%)	51 (24.3%)	56 (26.7%)	76 (36.3%)	63% Rank 2
Plastic consumption	9 (4.3%)	12 (5.7%)	48 (22.9%)	55 (26.2%)	86 (41%)	67.2% Rank 1
Vehicles, trains, ships and aero planes	11 (5.2%)	13 (6.2%)	61 (29%)	58 (27.6%)	67 (31.9%)	59.5% Rank 5
Rapid urbanization	9 (4.3%)	21 (10%)	66 (31.4%)	63 (30%)	51 (24.3%)	54.3% Rank 9
Population overgrowth	11 (5.2%)	18 (8.6%)	64 (30.5%)	62 (24.8%)	65 (31%)	55.8% Rank 8
Combustion of fossil fuels	7 (3.3%)	20 (9.5%)	56 (26.7%)	67 (31.9%)	60 (28.6%)	60.5% Rank 4
Agricultural waste	15 (7.1%)	33 (15.7%)	73 (34.8%)	50 (23.8%)	39 (18.6%)	42.4% Rank 10
Deforestation	11 (5.2%)	13 (6.2%)	44 (21%)	60 (28.6%)	82 (39%)	57.6% Rank 7
Lowered biodiversity	7 (33%)	14 (6.7%)	65 (31%)	61 (29%)	63 (30%)	59% Rank 6

From the above analysis, it can be understood that 67.2% of respondents are concerned and highly concerned that plastic consumption is the most significant cause of environmental pollution, which is ranked 1. 63% of respondents are aware that the dumping of solid wastes is the cause of the pollution which is ranked 2. Industrial activities are also the cause of environmental pollution which is ranked 3 (61.4%). The activity of burning agricultural wastes causing environmental pollution is ranked ten since only 42.4% of the respondents know that the activity is causing pollution. Deforestation causing environmental pollution is ranked 7, lowered biodiversity ranked 6, population overgrowth is 8, vehicles, trains, ships, and aeroplanes ranked 5, and combustion of fossil fuels ranked 8.

This clearly shows that plastic consumption, dumping of solid waste, and industrial activities are the major causes of high levels of environmental pollution.

Table 7: Analysis of Understanding about various categories of environmental pollution

Analysis of Understanding various categories of environmental pollution						
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Total of agree and strongly agree and ranking
Air pollution	7.1% (15)	3.3% (7)	15.7% (33)	26.7% (56)	47.1% (99)	63.8% Rank 3
Sound and Noise Pollution	3.3% (7)	6.2 (13)	35.2% (74)	30.5% (64)	24.8% (52)	55.3% Rank 4
Water pollution	3.8% (8)	3.8 % (8)	19.5% (41)	30% (63)	42.9% (99)	72.9% Rank 1
Soil Pollution	2.9% (6)	6.2% (13)	23.8% (50)	31.4% (66)	35.7% (75)	67.1% Rank 2

Based on the above statement, it can be understood that the majority of the respondents agree and strongly agree that the most important type of pollution is water pollution, which is ranked 1 based on their understanding, while soil pollution is ranked 2, Air pollution occupies 3rd rank and least is the sound and noise pollution.

Findings, Suggestions and Conclusion

Findings:

The following are the findings from the study conducted on Generation G of University students in the city of Hyderabad.

1. Only 37.2% (79) highly heard and very highly heard from TV as a source of pollution information
2. Radios are the least (11.9%) source of information for respondents to acquire knowledge about environmental pollution

3. The Internet is ranked 1 as a source of information since 65.7% have indicated that they can get pollution information from the Internet.
4. Environmental groups, government agencies, and friends and relatives are not playing a considerable role in providing information on environmental pollution.
5. Respondents have a clear understanding that environmental pollution is influencing wealth, health and safety however, out of those, they are more aware that it is more affecting health (74.8%) compared to safety (61%) and wealth (49%)
6. 67.2% of respondents agreed that plastic consumption is the most significant cause of environmental pollution; the next is the dumping of solid waste, and the last is agricultural waste (42.4%).
7. Water pollution is the major type of environmental pollution (72.9%)

Suggestions:

The following are the suggestions to increase awareness about environmental pollution so that necessary actions can be taken to increase awareness, decrease the impact of environmental pollution, and maintain sustainability in society.

1. Increase the propagation through electronic media as well as print media such as TV, radio, and the Internet as well the newspapers to allocate specific columns daily so as to bring awareness about environmental pollution as much as possible to make known the cause of environmental pollution and its adverse impact in terms of health, safety and wealth.
2. The government needs to provide a helping hand by way of funding to environmental action groups to increase awareness of environmental pollution
3. There is a need to introduce environmental studies as a part of the regular curriculum at all levels, such as primary, secondary and college levels. Particularly at the undergraduate level, it should be made a compulsory subject whether the student studies Arts or Science or Commerce or Engineering or Technology. According to Jusoh et al. (2018), practice-based education has a more beneficial effect than knowledge-based education.

Conclusion.

Based on the results and discussion, the respondents are in the age group of 16 to 26, called Generation Z students, of whom male respondents are 51.4%, as indicated in the aforementioned sections; it can be concluded that Generation Z university students possess moderate levels of environmental awareness. The majority of the respondents have indicated that the internet is the major source of pollution information; pollution has a high impact on health rather than on safety and wealth; out of the activities consumption of plastic consumption is the most significant cause of pollution compared to other activities and water pollution is the major type of environmental pollution.

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