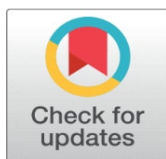
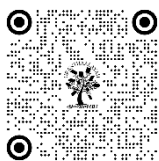


A STUDY ON ENVIRONMENTAL AWARENESS AMONG RESIDENTIAL AND NON RESIDENTIAL SECONDARY SCHOOL STUDENTS

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ABSTRACT

The world today is facing multiple environmental crises due to the reckless and thoughtless exploitation of natural resources by humans. There is an urgent need to foster environmental awareness among individuals to ensure the conservation, protection, and sustainability of our environment. As a result, environmental education has been integrated into school curricula from an early stage.

This study explores environmental awareness among secondary school students, comparing those in residential and non-residential settings, with a focus on gender and rural-urban differences. Environmental education plays a pivotal role in fostering sustainable behaviors and informed ecological practices. The study utilized a normative survey method and a self-designed environmental awareness questionnaire to assess the knowledge of 600 students across various demographic categories. The research findings reveal no significant difference in environmental awareness between residential and non-residential students. However, gender-based differences were observed, with female students consistently demonstrating higher environmental awareness than their male counterparts, particularly in residential settings. Additionally, the study identified a more pronounced gender gap in rural non-residential schools, where girls outperformed boys. These findings suggest that while residency status does not directly influence environmental awareness, gender and geographical context significantly impact students' environmental attitudes. The study highlights the need for targeted educational interventions to engage male students, particularly in rural settings, and recommends curriculum modifications that address the specific needs of both genders. Educational policies should focus on fostering inclusive, community-based learning environments that encourage environmental literacy for all students, regardless of residency.

Keywords: Attitude, Environmental Awareness, Gender, Secondary Schools



1. INTRODUCTION

The environment sustains life-sustaining processes by supplying raw materials, energy resources, and mechanisms to absorb waste, all of which underpin economic activities in production and domestic sectors. Industries rely heavily on non-renewable resources such as fossil fuels (coal, petroleum) and metal ores, while elements like flora, soil, and water directly enable agricultural and manufacturing outputs. However, disruptions in the physical, chemical, or biological characteristics of air, water, or soil can degrade ecological balance and pose risks to human health and survival.

This study investigates environmental awareness among secondary school students, comparing those in residential and non-residential educational settings. UNESCO emphasizes that environmental education is not a standalone discipline but an interdisciplinary strategy to advance conservation efforts and enhance societal welfare. By raising awareness, communities gain critical insights into the causes and consequences of pollution and ecological degradation.

In the face of escalating environmental challenges, education and civic engagement are pivotal in driving initiatives to preserve and restore ecosystems.

Contemporary education must move beyond rigid subject silos and address societal divides such as socioeconomic status, culture, and geography to foster inclusivity. Environmental education should inspire collective consciousness, enabling policies that prioritize ecological integrity. To achieve sustainable conservation and ensure equitable quality of life, both structured academic curricula and community-based learning must prioritize ecological literacy, empowering individuals to act as stewards of the planet (Sundaravalli, 2012).

2. RESEARCH REVIEWS

Katoch (2017) examined environmental awareness and attitudes among school students, revealing comparable levels of environmental knowledge between male and female students. However, the study highlighted that female students demonstrated more proactive and positive attitudes toward environmental conservation compared to their male counterparts.

Yalçınkaya and Çetin (2018) explored secondary school students' attitudes and perceptions toward environmental education. Their findings identified significant variations based on gender and school type, though no notable differences emerged across class levels. The study emphasized the need for schools to implement targeted activities and programs to strengthen environmental literacy and engagement among students.

Zahid Bashir et al. (2022) conducted a survey-based study in Kulgam, India, analyzing environmental awareness, attitudes, and participation among secondary students. Using a self-designed questionnaire with 200 participants from government and private schools, the study found gender-based disparities: male students exhibited higher environmental awareness, while female students displayed more positive attitudes. Additionally, private school students demonstrated greater awareness, whereas government school students showed stronger participation in environmental initiatives and more favorable attitudes.

Dr. Lokanadha Reddy G. and Sreedevi Reddy R (2022) investigated environmental awareness and attitudes among secondary students, focusing on gender and community-based differences. The survey-based research concluded that neither gender nor community background significantly influenced students' environmental awareness or attitudes, suggesting a uniform lack of engagement across demographic groups.

Gustria and A. Fanzi (2023) analyzed high school students' environmental attitudes as part of a preliminary effort to develop climate change-integrated physics curricula. Utilizing descriptive statistics, the research revealed low baseline levels of environmental consciousness among students. The authors underscored the urgency of creating context-specific, interdisciplinary teaching materials to foster ecological responsibility and improve attitudes.

3. SIGNIFICANCE OF THE STUDY

The Environmental awareness plays a critical role in fostering responsible attitudes and behaviors toward ecological preservation. As secondary school students represent the next generation of decision-makers, equipping them with an informed understanding of environmental challenges is vital. This research investigates disparities in environmental awareness between residential and non-residential students, shedding light on the socio-educational factors that shape their ecological perspectives. By analyzing how peer dynamics, school-based initiatives, and community engagement influence students' awareness, the study underscores the need for targeted environmental education programs to address knowledge deficiencies and refine pedagogical approaches. Additionally, it advocates for integrating sustainable practices into daily life, inspiring students to adopt eco-conscious habits. Ultimately, the findings aim to bridge gaps in environmental literacy, strengthen educational frameworks, and cultivate a generation committed to sustainability and proactive environmental stewardship.

Environmental conservation entails the ethical, equitable, and prudent utilization of natural resources to balance societal, economic, and ecological needs. Addressing these challenges requires widespread awareness and education to empower individuals and communities to adopt sustainable practices. By prioritizing environmental literacy, societies can mitigate ecological degradation and secure a healthier, more resilient planet for humanity.

3.1. OBJECTIVES OF THE STUDY

- 1) To study environmental awareness among residential school and non residential secondary school students.
- 2) To identify the gender differences among residential and non-residential secondary students environmental awareness.
- 3) To examine environmental awareness between rural and urban residential school and non residential secondary school students.

3.2. HYPOTHESES OF THE STUDY

- 1) There is no significant difference in environmental awareness among residential school and non residential secondary school students.
- 2) There is no significant gender difference among residential and non-residential secondary students environmental awareness.
- 3) There is no significant difference in environmental awareness between rural and urban residential school and non residential secondary school students.

RESEARCH METHODOLOGY: To achieve the stated objectives, the normative survey method was employed. This method is used to describe and interpret the existing level of environmental awareness among students.

RESEARCH TOOLS: An environmental awareness questionnaire was developed and validated by the researcher. The questionnaire consists of 32 multiple-choice questions, requiring approximately one hour completing, each question is scored as follows; correct response: 1 mark and incorrect response: 0 marks, Thus, the maximum possible score are 32 marks per respondent.

SAMPLE SELECTION: This study aims to analyze the environmental awareness experiences of students in residential and non-residential schools in Chikkamagalur, focusing on gender and rural-urban background. A stratified sampling method will be used to ensure a representative sample, with a total of 600 students equally divided between residential 300(150 Boys (75 Rural, 75 Urban), 150 Girls (75 Rural, 75 Urban) and non-residential schools 150 Boys (75 Rural, 75 Urban), 150 Girls (75 Rural, 75 Urban) (300 students each). This design will help provide deeper insights into the influence of these factors on educational outcomes.

STATISTICAL TECHNIQUES FOR RESEARCH DATA ANALYSES: The researcher employed several statistical techniques for analyzing the data, including Mean, Standard Deviation (S.D.), and Critical Ratio (t-test). These techniques were used to evaluate the central tendency, variability, and significance of the differences in human rights awareness among nursing students based on gender and demographic factors.

ANALYSIS AND DISCUSSION: This section presents a detailed analysis and discussion of the data on the environment awareness among residential and non residential secondary school students.

OBJECTIVE BASED ANALYSIS: 1 To study environmental awareness among residential and non residential secondary school students.

Table 1 the environmental awareness residential and non residential students.

Variables	N	Mean	SD	T value
Residential Students	300	21.45	5.21	-0.875
Non Residential Students	300	21.81	4.87	

Not significant @0.05 levels

This study investigates whether a significant difference exists in the mean scores of Residential and Non-Residential students. An independent samples t-test was conducted at the 0.05 significance level to compare the two groups. A total of 600 students participated, with 300 Residential and 300 Non-Residential students. The mean score for Residential students was 21.45 (SD = 5.21), while Non-Residential students had a mean score of 21.81 (SD = 4.87). The statistical

analysis yielded a t-value of -0.875 with 598 degrees of freedom (df). The critical t-value at the 0.05 significance level was ± 1.96 . Since the computed t-value fell within this range, the study failed to reject the null hypothesis. These findings indicate no statistically significant difference in the mean scores between residential and non-residential students, suggesting that residency status does not significantly impact student performance.

OBJECTIVE BASED ANALYSIS 2: To identify the gender differences among residential and non-residential secondary students environmental awareness.

Table 2 Gender Differences among Residential and Non-Residential Students Environmental Awareness

Variables	N	Mean	SD	t value
Residential Students boys	150	25.18	2.68	-6.39.
Residential Students Girls	150	27.00	2.23	
Non Residential Students boys	150	26.5.	2.07	-2.01
Non Residential Students Girls	150	27.00	2.23	

@0.05 significant levels

This study examines differences in environmental awareness among secondary school students, A sample of 300 students was divided into two groups: residential (n = 150 boys, n = 150 girls) and non-residential (n = 150 boys, n = 150 girls). The means and standard deviations were calculated for each group, and independent sample t-tests were conducted to evaluate differences in their scores. The results indicate that residential female students have significantly higher scores than residential male students ($t = -6.39, p < 0.05$). Similarly, among non-residential students, female students also outperform male students, though the difference is less pronounced ($t = -2.01, p \approx 0.05$). The higher absolute t-value in the residential category suggests a stronger gender difference compared to the non-residential category. Residential students might experience greater peer influence, or support systems that disproportionately benefit female students. In contrast, non-residential students may have more balanced external influences, leading to a smaller gender disparity. A one-way ANOVA was conducted to test for statistically significant differences in mean environmental awareness scores across these groups ($F = 17.57, p < 0.001$).

Table 2.1 Gender Differences among Residential and Non-Residential Students Environmental Awareness

Source of Variable	df	Sum of Squares	Mean Sum of Squares	F-Ratio
Between the groups	3	273.6	91.2	1.70@
Within the groups	596	3092.07	5.19	

@0.05 significant levels

This data represents the results of a one-way ANOVA test, which compares means between multiple groups to determine if there is a statistically significant difference. The F-ratio (1.70) is calculated by dividing the mean sum of squares between groups (91.2) by the mean sum of squares within groups (5.19). The F-value compares the variance between the groups to the variance within the groups to determine whether there are significant differences among group means. To determine significance, the F-value is compared to a critical value from the F-distribution table based on the degrees of freedom: df (between groups) = 3 df (within groups) = 596. At a standard significance level ($\alpha = 0.05$), if the calculated F-value (1.70) is smaller than the critical F-value, the result is not statistically significant. Given that 1.70 is a relatively low F-value, it is likely not significant, suggesting that there is no strong evidence of a meaningful difference between group means.

Objective 3. To examines environmental awareness between rural and urban residential school and non residential secondary school students.

Table 3 Environmental awareness among rural and urban residential and non residential secondary school students

Variables	N	Mean	SD	t value
Residential Students urban boys	75	26.48	1.48	-2.04

Residential Students urban Girls	75	27	1.64	
Non Residential Students rural boys	75	26.61	1.70	-2.56
Non Residential Students rural Girls	75	27.37	1.93	

@0.05 significant levels

The table 3 reveals that residential urban boy vs. girls ($t = -2.04$): The mean score for residential urban boys (26.48) is significantly lower than that of residential urban girls (27.00). The t-value of -2.04 indicates a statistically significant difference ($p < 0.05$), with girls outperforming boys in this category. The negative sign of the t-value confirms that boys have a lower mean compared to girls. Non-Residential Rural Boys vs. Girls ($t = -2.56$): The mean score for non-residential rural boys (26.61) is significantly lower than that of non-residential rural girls (27.37). The t-value of -2.56 indicates a stronger and statistically significant difference ($p < 0.05$), with girls again outperforming boys. The larger magnitude of this t-value suggests a more pronounced gender gap in rural non-residential settings compared to urban residential settings. The critical t-value for 148 degrees of freedom ($df = N1 + N2 - 2 = 75 + 75 - 2 = 148$) at a significance level of $\alpha = 0.05$ is approximately ± 1.976 (two-tailed test). Both t-values ($t = 2.04$ and $t = 2.56$) exceed the critical value, confirming that the observed differences are statistically significant.

4. RESEARCH FINDING

- 1) These results suggest that residency status does not significantly affect the environmental awareness of secondary school students. The environmental awareness scores of residential and non residential students are essentially similar, indicating that other factors beyond residency status may play a role in shaping environmental awareness among students.
- 2) The findings suggest that gender differences are more pronounced among residential students. This has important implications for educational policies and student support systems. Future research should investigate factors such as socio-economic background, study habits, and institutional support to better understand the role of residential status in academic performance.
- 3) Both urban and rural residential and non-residential settings reveal a clear gender disparity in environmental awareness, with girls consistently having higher scores than boys. The observed differences are statistically significant in both cases, with the rural non-residential setting showing a stronger gender gap than the urban residential setting. These findings highlight the need for targeted interventions to engage male students more effectively in environmental education, especially in rural areas where the gender gap is more significant.

5. EDUCATIONAL IMPLICATIONS

- 1) The lack of significant differences in environmental awareness between residential and non-residential students suggests that residency status alone may not be a critical factor in shaping students' environmental knowledge. Educational policies should therefore focus on other potential influences, such as curricular content, teaching methods, and community involvement, which could better engage students in environmental education, regardless of their living arrangements. Furthermore, the study implies that environmental awareness programs should be designed to reach all students equally, ensuring that both Residential and Non-Residential students receive similar opportunities for learning and development in this area.
- 2) The study indicates a more pronounced gender gap in environmental awareness, especially among residential students. This highlights a need for targeted educational strategies to bridge the gap and ensure equal engagement and performance across genders. For residential students, where the gender gap was most significant, curricula and teaching methods could be adjusted to better cater to the learning needs and interests of male students, perhaps through more interactive, hands-on, and relatable environmental topics. Additionally, mentorship programs and peer support systems could play an important role in encouraging male students to take a more active interest in environmental issues.
- 3) The urban residential and rural non-residential settings suggest that gender differences are more pronounced in rural areas, where girls outperform boys in environmental awareness. Given this, educational interventions in

rural non-residential schools should place particular emphasis on engaging male students by addressing any cultural, socio-economic, or institutional factors that may contribute to the observed gap. In contrast, urban residential settings may benefit from gender-neutral strategies that focus on fostering a balanced engagement with environmental education for both boys and girls. These findings underscore the importance of considering geographical context when designing educational policies and programs that aim to promote gender equality in environmental education.

- 4) The study shows no significant differences based solely on residency status, schools should consider a holistic approach to improving environmental education, one that goes beyond where students live. This could include integrating environmental topics into other areas of study, encouraging community-based projects, and utilizing technology and digital resources to engage students from various backgrounds. Schools should also collaborate with local communities, government programs, and environmental organizations to provide students with a well-rounded education that encourages them to become informed and active participants in environmental conservation efforts.

6. CONCLUSION

This study highlights the need for a comprehensive approach to environmental education that addresses both gender disparities and geographical context. While residency status does not significantly impact students' environmental awareness, gender differences are more pronounced, especially in rural areas. To bridge these gaps, educational policies should focus on engaging male students, particularly in rural non-residential settings, through tailored interventions. Additionally, curricular adjustments, mentorship programs and community involvement should be prioritized to ensure equitable opportunities for all students. By fostering inclusive and gender-sensitive environmental education, schools can better prepare students to actively contribute to environmental sustainability. The aim of environmental awareness is clearly to show the economic, social, political and ecological interdependence of the modern world. The awareness helps to develop a sense of responsibility and solidarity among the students as a foundation for guarantee of conservation and improvement of the environment

CONFLICT OF INTERESTS

None.

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