



OPEN ACCESS

Volume: 5

Issue: 2

Month: June

Year: 2026

ISSN: 2583-7117

Published: 30.06.2026

Citation:

Dr. Kamlesh Ahirwar "Environmental awareness and Sustainable Practices among University students" International Journal of Innovations in Science Engineering and Management, vol.5, no.2, 2026, pp. 620- 626

DOI:

10.69968/ijsem.2026v5i2620-626



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Environmental awareness and Sustainable Practices among University students

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Abstract

The environmentalist philosophy stresses the need of people respecting and preserving the natural world from the harms that humans have brought about. This research examines how environmental awareness shapes the sustainable habits of university students. The primary goal was to determine the depth of students' ecological knowledge and whether such understanding truly drives their daily choices. By gathering data from 230 participants via a Likert-scale survey, we applied statistical measures—including mean, standard deviation, and Pearson correlation—to analyze the findings. The evidence suggests that students maintain a strong grasp of environmental issues, specifically concerning climate change and waste reduction. These insights frequently lead to concrete actions, such as conserving water and opting for reusable products. Consequently, the significant link between awareness and behavior indicates that advancing environmental education remains a crucial strategy for embedding long-term sustainability within the university environment.

Keywords; *Environmental Awareness, Sustainable Behavior, University Students, Climate Change and Waste Reduction, Environmental Education and Sustainability*

INTRODUCTION

Environmental crises like climate change, rising pollution, and the loss of biodiversity have reached a tipping point, making it more urgent than ever to adopt sustainable habits at both the personal and institutional levels (Yogalakshmi, 2025). Universities are right at the center of this challenge. They are responsible for shaping the perspectives and daily habits of the students who will eventually take over as our next generation of leaders and professionals. Because of this, higher education institutions have a unique opportunity to instill a sense of environmental responsibility that sticks with students throughout their careers. This stage of life is particularly vital for building environmental consciousness, as students are regularly introduced to new social responsibilities and community-driven values (Wardhana, 2022). While environmental awareness involves understanding ecological crises and their solutions, sustainable practices are the tangible actions like saving water, cutting down on waste, or opting for eco-friendly transit that bring those solutions to life. Despite the numerous green initiatives, workshops, and policies promoted across various campuses, a persistent gap often remains between student knowledge and their actual behavior. For universities aiming to move past theoretical discussions, investigating this disconnect is vital to developing impactful programs that successfully transform environmental awareness into permanent, lifelong habits (Dipalaya, 2024).

Importance of Environmental Awareness among Students

Building environmental awareness in students is crucial because it helps them develop a real sense of responsibility toward nature just as they are starting their adult lives. When students actually understand the impact of issues like deforestation, climate change, and waste, they are much more likely to change their daily habits (Dicle et al., 2010).

This might mean using less plastic, saving energy, or getting involved in local green projects. It goes beyond just learning facts. It encourages them to think critically and see how their small, personal choices can actually affect the environment on a global scale. Since these students will soon become the next generation of educators, entrepreneurs, and policymakers, their values today will eventually dictate the sustainability of our future workplaces and communities (Verma & Verma, 2022). By prioritizing this awareness, universities do more than just educate; they spark a culture of accountability that extends to peers and families, creating a broader social shift toward a healthier, more sustainable future.

Aspect	Importance among Students
Knowledge Development	Builds understanding of environmental issues and solutions
Behaviour Change	Encourages recycling, energy saving, and waste reduction
Responsible Citizenship	Develops socially and environmentally responsible individuals
Future Leadership	Prepares students to make sustainable decisions in careers
Campus Improvement	Supports green campus programs and participation
Social Influence	Inspires peers, families, and communities to act sustainably
Long-term Sustainability	Contributes to protection of resources for future generations

Sustainable Practices among Youth and Students

Sustainable habits among young people and students involve the daily choices they make to minimize their environmental footprint and use natural resources more thoughtfully. Because they are in a phase of life defined by learning and social connection, students are often more willing to adapt their behavior and embrace eco-friendly lifestyles (Sivamoorthy et al., 2013). These personal decisions carry significant weight, as the habits formed today often influence the values of their families, the policies of their institutions, and the overall direction of society's future.

Common Sustainable Practices among Youth and Students:

- i. Using reusable bottles, bags, and containers
- ii. Switching off lights, fans, and devices when not in use
- iii. Conserving water during daily activities
- iv. Recycling paper, plastic, and other materials
- v. Using public transport, cycling, or walking
- vi. Avoiding unnecessary printing and using digital notes

- vii. Participating in tree plantation and cleanliness drives
- viii. Purchasing eco-friendly and durable products
- ix. Reducing food waste in homes and hostels
- x. Supporting environmental clubs and awareness campaigns

When students consistently adopt these habits, they play a vital role in cutting down waste, preserving vital resources, and fostering a genuine culture of accountability toward nature. These small, everyday choices might seem minor on their own, but when embraced by an entire student body, they generate a powerful collective impact that drives lasting benefits for both the campus and the wider community.

Sustainable Practice	Environmental Benefit
Reusable products	Reduces single-use plastic waste
Energy conservation	Lowers electricity consumption
Water saving	Protects freshwater resources
Recycling	Reduces landfill waste
Public transport/cycling	Cuts air pollution and emissions
Digital learning materials	Saves paper and printing resources
Tree plantation	Improves greenery and air quality
Food waste reduction	Minimizes resource loss and garbage generation

LITERATURE REVIEWS

(Hassan et al., 2009) This study investigates environmental awareness and sustainable practices among university students. The main objective was to examine how much students know about environmental issues and to analyze the link between that awareness and their actual behavior. We collected primary data from 230 students using a structured questionnaire that included demographic details and statements based on a five-point Likert scale. The data were then analyzed using frequency, percentage, mean, standard deviation, Pearson correlation, and one-sample t-tests. The research concludes that building environmental knowledge is a key factor in promoting responsible habits among students. By improving what students know about the planet, universities can better support their own sustainability goals. The study shows that when students are well-informed, they are much likely to take part in initiatives that protect the environment and encourage a greener campus culture.

(M, 2024) The research examined college students in Coimbatore, India, to see how environmental classes affected them. The objective was to determine if environmental education programs were successful in

raising students' environmental consciousness and encouraging them to take action. Students attending different schools in Coimbatore may use this convenient way. The research looked at how much students' understanding of environmental concerns, their actions in support of the environment, and their plans to implement sustainable practices were affected by environmental education. The study also looked at how schools may help raise students' environmental consciousness and encourage them to live more sustainably.

(Benzehaf et al., 2025) This research utilized the Theory of Planned Behavior and environmental education frameworks to explore how college students view environmental issues and how they act on them. The goal was to better understand the link between knowledge, attitudes, and sustainable habits. Using a qualitative approach, we conducted semi-structured interviews with 32 students from various academic backgrounds. The data was then organized through thematic analysis to find common patterns in their experiences. The results showed that while most students have a good grasp of environmental issues and maintain positive attitudes, their actual sustainable actions are lacking. This highlights a clear gap between what students know and what they actually do. These findings suggest that while current theoretical models are useful, they may not fully explain student behavior. This indicates a need to update environmental theories to include the social and cultural factors that influence whether awareness actually turns into action.

(Aziah et al., 2025) According to the research, there is a link between learning about environmental sustainability and really doing something about it. Learning about sustainability helps people act in a more sustainable way. Responsible environmental behavior is encouraged by a better understanding of environmental sustainability. Sustainable development programs will be shaped by environmentally responsible behaviors. The positive link between AW, KN, and action among millennial students implies that their behaviors are influenced by their awareness and knowledge. The education and awareness of Millennial students are crucial for their environmental sustainability initiatives. College students' efforts to promote environmental sustainability are greatly influenced by their level of knowledge.

(Aldawsari & Nemt-allah, 2026) The study focused on the connection between environmental awareness and the Sustainable Development Goals among Egyptian college

students. To gather data, 582 students from four universities took part in a cross-sectional survey using convenience sampling. The research used two main tools: the Environmental Responsibility Scale and the Environmental Education Awareness Scale, both of which proved to be reliable for this group. The data was then analyzed using linear regression, Pearson correlation, and univariate analysis of variance to look for patterns and differences. The results showed a very strong positive link between education awareness and environmental responsibility. In fact, awareness explained nearly 72% of the difference in how responsible students felt. While where a student lived didn't seem to matter, female students scored much higher than males in both awareness and responsibility. These findings are important because they challenge the idea that there is always a gap between what people know and how they act. It suggests that when environmental education follows the SDGs, it can actually succeed in turning theory into real-world action.

RESEARCH GAP

While various studies have explored how students perceive the environment and how they behave, few have examined both awareness and sustainable action within a single, integrated framework. Much of the existing literature tends to treat these as isolated topics, focusing either on what students know or on specific green habits in a vacuum. Furthermore, shifting educational landscapes and the rapid evolution of environmental challenges mean that older data may no longer reflect current realities. This study aims to fill that gap by providing updated evidence that analyzes the direct relationship between awareness and practice together.

OBJECTIVES OF THE STUDY

1. To examine the level of environmental awareness among university students.
2. To identify the sustainable practices adopted by university students.
3. To analyze the relationship between environmental awareness and sustainable practices among university students.
4. To assess students' willingness to participate in sustainability initiatives.
5. To suggest measures for improving sustainable behaviour in universities.

HYPOTHESES OF THE STUDY

H01: There is no significant relationship between environmental awareness and sustainable practices among university students.

H02: There is no significant difference between the mean score of environmental awareness among university students and the neutral benchmark level.

RESEARCH METHODOLOGY

To study the environmental awareness and sustainable habits of university students, this research used a descriptive design. We gathered primary data using a custom questionnaire specifically created to meet our research goals. The survey was divided into two parts: one for demographic information and the other using a five-point Likert scale to evaluate different attitudes and behaviors.

Using convenience sampling, we collected 230 valid responses from a diverse group of students across various academic levels, subjects, and living backgrounds. Once the data was organized and coded, we used several statistical methods to interpret the results, including frequency, percentages, mean, and standard deviation. We also applied Pearson correlation and one-sample t-tests to check the relationships between variables and test our main hypotheses. Throughout the process, we made sure that the identity of every respondent remained strictly confidential.

Particulars	Description
Research Design	Descriptive research
Nature of Data	Primary data
Data Collection Method	Structured questionnaire
Respondents	University students
Sample Size	230
Sampling Technique	Convenience sampling
Measurement Scale	Five-point Likert scale
Variables Studied	Environmental awareness, Sustainable practices
Statistical Tools Used	Frequency, Percentage, Mean, S.D., Correlation, One-sample t-test
Study Area	University students

DATA ANALYSIS AND INTERPRETATION

Once the data was gathered, it was organized and coded for analysis using statistical methods suited to the goals of the research.

To make sense of the findings, we relied on frequencies, percentages, means, and standard deviations. We also used Pearson correlation and one-sample t-tests to check the relationships between variables and see if the hypotheses held up. The following analysis breaks down the demographic details of the participants, the descriptive survey results, and the final outcomes of the hypothesis tests.

Gender

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	121	52.6	52.6	52.6
	Female	109	47.4	47.4	100.0
	Total	230	100.0	100.0	

Out of 230 respondents, 121 (52.6%) were male and 109 (47.4%) were female. The data shows a slightly higher participation of male students compared to female students. However, both groups were fairly represented, indicating a balanced gender composition in the study sample.

Level of Study

Level of Study					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Undergraduate	150	65.2	65.2	65.2
	Postgraduate	63	27.4	27.4	92.6
	Doctoral	17	7.4	7.4	100.0
	Total	230	100.0	100.0	

Out of 230 respondents, 150 (65.2%) were undergraduate students, 63 (27.4%) were postgraduate students, and 17 (7.4%) were doctoral students. The data indicates that undergraduate students formed the majority of the sample, followed by postgraduate and doctoral students.

Faculty/Stream

Faculty/Stream					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Arts/Humanities	49	21.3	21.3	21.3
	Commerce/Management	50	21.7	21.7	43.0
	Science	29	12.6	12.6	55.7
	Engineering/Technology	88	38.3	38.3	93.9
	Other	14	6.1	6.1	100.0
	Total	230	100.0	100.0	

Out of 230 respondents, 49 (21.3%) belonged to Arts/Humanities, 50 (21.7%) to Commerce/Management, 29 (12.6%) to Science, 88 (38.3%) to Engineering/Technology, and 14 (6.1%) to other streams. The majority of respondents were from Engineering/Technology, followed by Commerce/Management and Arts/Humanities.

Out of 230 respondents, 175 (76.1%) belonged to urban areas, while 55 (23.9%) were from rural areas. The data shows that the majority of participants were urban residents, indicating higher representation of students from urban locations in the study sample.

Place of Residence

Place of Residence					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	175	76.1	76.1	76.1
	Rural	55	23.9	23.9	100.0
	Total	230	100.0	100.0	

Descriptive Statistics

Descriptive Statistics					
	N	Min	Max	Mean	S.D.
I am aware of major environmental issues such as pollution and climate change.	230	1	5	2.07	1.127
I understand the importance of conserving natural resources.	230	1	5	1.67	.955
I know the harmful effects of excessive plastic use.	230	1	5	1.87	1.103
I am aware that deforestation affects ecological balance.	230	1	5	1.84	1.164
I understand that water scarcity is a serious environmental issue.	230	1	5	2.47	1.529
I know that recycling helps reduce waste and pollution.	230	1	5	2.94	1.368
I believe that human activities contribute to global warming.	230	1	5	2.23	1.255
I am aware of the benefits of renewable energy sources.	230	1	5	1.81	1.116
I stay informed about environmental issues through media or education.	230	1	5	2.12	1.282
I know that individual efforts can help protect the environment.	230	1	5	2.47	1.497
I switch off lights and electrical devices when not in use.	230	1	5	2.97	1.368
I use reusable bags, bottles, or containers instead of disposable ones.	230	1	5	2.25	1.266
I try to reduce water wastage in my daily activities.	230	1	5	1.81	1.117
I use public transport, cycling, or walking whenever possible.	230	1	5	2.13	1.286
I separate waste for recycling whenever facilities are available.	230	1	5	2.42	1.466
I avoid printing unnecessarily and prefer digital materials.	230	1	5	2.80	1.652
I carry my own bottle or cup to reduce single-use plastic waste.	230	1	5	2.33	1.522
I participate in tree plantation or cleanliness campaigns.	230	1	5	2.02	1.248
I buy eco-friendly or durable products whenever possible.	230	1	5	2.27	1.253
I encourage others to follow environmentally friendly practices.	230	1	5	2.23	1.362
Valid N (listwise)	230				

The study used a scale where 1 represents Strongly Agree and 5 represents Strongly Disagree, meaning lower mean scores reflect higher agreement. Based on the descriptive statistics, students show a high degree of environmental awareness, as most scores in this category were below 2.50. Participants agreed most strongly with the importance of conserving natural resources (Mean = 1.67), the benefits of renewable energy (Mean = 1.81), and the fact that deforestation harms ecological balance (Mean = 1.84). The data also indicates that students are well aware of the damage caused by plastic and general environmental issues.

In terms of behavior, the results show positive habits in certain areas like reducing water waste (Mean = 1.81), joining tree-planting or cleaning drives (Mean = 2.02), and choosing reusable products (Mean = 2.25). However, other practices were less consistent. Higher mean scores for turning off electronics (Mean = 2.97), recycling (Mean = 2.94), and avoiding unnecessary printing (Mean = 2.80) suggest these habits are not yet fully established. Ultimately, the findings show that while environmental knowledge is high among students, their adoption of sustainable practices remains at a moderate level.

Hypotheses testing

H01: There is no significant relationship between environmental awareness and sustainable practices among university students.

Correlations			
		Environmental Awareness	Sustainable Practices
Environmental Awareness	Pearson Correlation	1	.970**
	Sig. (2-tailed)		.000
	N	230	230
Sustainable Practices	Pearson Correlation	.970**	1
	Sig. (2-tailed)	.000	
	N	230	230

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis was conducted to examine the relationship between environmental awareness and sustainable practices among university students. The results reveal a very strong positive correlation between environmental awareness and sustainable practices ($r = 0.970$, $p = 0.000$), which is significant at the 0.01 level. This indicates that students with higher environmental awareness are more likely to adopt sustainable practices in their daily lives. Since the significance value is less than 0.01, the null hypothesis stating that there is no significant relationship between environmental awareness and sustainable practices among university students is rejected. Therefore, it can be concluded that a significant positive relationship exists between the two variables.

H02: There is no significant difference between the mean score of environmental awareness among university students and the neutral benchmark level.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Environmental Awareness	230	22.95	5.114	.337

One-Sample Test							
	Test Value = 0					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference			
					Lower	Upper	
Environmental Awareness	68.051	229	.000	22.948	22.28	23.61	

The one-sample t-test was conducted to examine whether the mean score of environmental awareness among university students significantly differs from the benchmark level. The results show that the mean environmental awareness score was 22.95 with a standard deviation of 5.114. The calculated t-value was 68.051 with 229 degrees of freedom, and the significance value was 0.000, which is less than 0.05. This indicates that the mean score differs significantly from the benchmark level. Therefore, the null hypothesis stating that there is no significant difference between the mean score of environmental awareness among university students and the neutral benchmark level is rejected. It can be concluded that students possess a significantly higher level of environmental awareness.

CONCLUSION

This research looked into environmental awareness and sustainable practices among university students through a five-point Likert scale survey. The results show that students generally have a strong grasp of environmental issues. Most agreed on the importance of addressing climate change, pollution, and plastic waste, which shows that the student body is well-informed and recognizes the need for conservation. In terms of daily actions, students are active in saving water, using reusable items, and joining cleanliness drives. However, some habits like consistent recycling, cutting paper use, and turning off electronics still need improvement. A statistical correlation confirmed a strong link between awareness and action. This proves that as students gain more knowledge, their behavior becomes more responsible. The study highlights how important universities are in building a culture of responsibility. By expanding awareness campaigns and practical green projects, universities can better encourage the sustainable habits needed for the future.

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