A Study on the Role of College Students in Practicing Sustainable Lifestyles for a Green Future

Dr. Rinky Rajwani[1]* | Dr. Suraj Agarwala[2]

[1,2]B. K. Birla College (Empowered Autonomous), Kalyan.

*Corresponding Author: rinkybirla30@gmail.com

ABSTRACT

Adopting sustainable lifestyle practices has become increasingly important in addressing major environmental challenges such as climate change, pollution, and the depletion of natural resources. College students represent a significant and influential group in society, and their participation in sustainability initiatives can contribute greatly to environmental protection. This study focuses on examining the role of college students in practicing sustainable lifestyle behaviours. These practices include reducing plastic consumption, recycling and proper waste segregation, conserving energy and water, and using environmentally friendly transportation options such as public transport or bicycles. The research aims to understand students' level of awareness, their attitudes toward sustainability, and the extent to which they incorporate these practices into their daily lives. A survey-based research approach was used to collect data from college students. The responses were analyzed to assess their involvement in sustainable activities. The findings reveal that although students generally demonstrate a growing awareness of environmental sustainability, the degree to which they apply sustainable practices varies. Several factors, including limited facilities, insufficient awareness initiatives, and existing behavioural habits, influence the level of implementation. The study concludes that educational institutions have an important role in promoting sustainability through initiatives such as awareness programs, green campus activities, and environmental education. Encouraging sustainable lifestyle practices among students can contribute significantly to long-term environmental protection and the development of responsible future citizens.

Keywords: Sustainable Lifestyle, College Students, Environmental Sustainability, Recycling, Plastic Reduction, Green Future, Resource Conservation.

Introduction

Environmental sustainability has become one of the most pressing global concerns in recent times. Rapid industrial growth, increasing urbanization, and excessive exploitation of natural resources have resulted in serious environmental problems such as pollution, climate change, and loss of biodiversity. These issues highlight the need for sustainable lifestyle practices across different sections of society.

Sustainable living involves adopting behaviours that minimize negative environmental impact by conserving resources and reducing waste generation. Educational institutions play a crucial role in promoting sustainable development because they influence the attitudes and behaviours of young individuals. College students, in particular, can contribute significantly to sustainability efforts. As educated and socially active individuals, they have the potential to influence their communities and

encourage environmentally responsible behaviour. By adopting sustainable practices in their daily lives, students can become important agents of change. (Filho et al., 2019)

There are several ways through which students can support environmental sustainability. These include reducing the use of plastic, practicing recycling and waste management, using eco-friendly transportation methods such as bicycles or public transport, and conserving energy and water. Such practices not only reduce environmental damage but also promote responsible consumption patterns. (Steg, L., &Vlek, C. (2009).

Therefore, understanding the role of college students in adopting sustainable lifestyle practices is essential. This research aims to examine the level of awareness among students, evaluate their participation in sustainable activities, and identify ways to encourage environmentally responsible behaviour for a greener future.

Research Problem

The growing environmental challenges such as climate change, pollution, and resource depletion require individuals to adopt sustainable lifestyle practices. College students are considered an important group in promoting sustainability because they are educated, socially active, and capable of influencing society. Many students are aware of environmental issues, their actual participation in sustainable practices varies.

The main research problem addressed in this study is the gap between environmental awareness and the practical adoption of sustainable lifestyle behaviors among college students. While students may understand the importance of practices such as recycling, reducing plastic use, conserving energy, and using eco-friendly transportation, these behaviors are not always consistently practiced in daily life.

Additionally, there is uncertainty regarding the extent to which educational institutions influence students' sustainable behaviors through awareness programs, green campus initiatives, and environmental education.

Therefore, this research seeks to investigate:

- Environmental awareness level among college students

- Whether this awareness translates into actual sustainable lifestyle practices

- The role of educational institutions in encouraging these behaviors

Understanding of this problem can help identify ways to promote sustainable habits among students and contribute to a greener future.

Review of Literature

Several researchers have emphasized the importance of student participation in promoting sustainability. Studies on environmental behavior among students highlight that awareness and education play a significant role in encouraging sustainable practices.

Research by Gifford Robert suggests that environmental attitudes and behavioral intentions significantly influence sustainable lifestyle choices among young individuals. The study indicates that higher environmental awareness in individuals are more likely to engage in eco-friendly practices. (Gifford, november 2012)

Research by Tanvi Khadar indicates that awareness of environmental issues is increasing among young adults. Many of them are willing to take steps to cut down their environmental impact. However, they are less likely to practice sustainable behaviours in places such as malls, cafés, and restaurants, especially when eco-friendly options are inconvenient or limited. Social influences—including family, friends, advertisements, and social media—also play a significant role in shaping sustainable purchasing decisions. The study further highlights that limited availability of sustainable options and their higher costs remain major barriers to adopting sustainable lifestyles. Therefore, a comprehensive approach that involves collaboration among governments, NGOs, and businesses is essential to encourage sustainable practices at the individual level. (Khandar, june 2024)

As per Laila Hanafy Kamel, an investigation of environmental awareness among university students found that the overall awareness level was below the expected level. The study reported that students' average environmental awareness score was about 58%, indicating a need for stronger environmental education and awareness campaigns in higher education institutions. The findings

suggested that increasing students' knowledge and environmental culture could contribute to sustainable development and environmentally responsible behavior. (Kamel, june 2020)

Shri, G. U., & Tiwari, R. R. (2021), examined environmental literacy among college students aged 17–30 years and highlighted the importance of environmental education in promoting sustainable behavior. The researchers found that environmental literacy plays a crucial role in shaping students' attitudes and awareness regarding environmental protection and sustainability. The study emphasizes that educational institutions must integrate environmental education into curricula to improve students' knowledge and responsible environmental behavior.

Chavada, K., & Charan, D. (2020) in a study conducted in Gujarat examined environmental awareness among college students using the Environmental Awareness Ability Measure. The findings showed that students had moderate awareness of environmental issues, though differences by educational level were observed. The study highlights the need for stronger environmental education programs to promote sustainable attitudes and practices among college students.

Sharma, A. (2017). Research examining environmental awareness and ecological behavior found that awareness significantly influences students' pro-environmental attitudes and behaviors. The study suggests that individuals with higher environmental awareness are more likely to engage in ecological practices, such as reducing pollution, conserving resources, and participating in environmental protection activities.

Sah, V., Padma Priya, K. T., & Seeta, Y. (2024) analyzed the relationship between environmental responsibility and eco-friendly behavior among engineering college students. The findings indicated a positive relationship between students' perception of environmental responsibility and their eco-friendly practices such as pollution reduction, sustainability participation, and resource management.

Shobha. (2025) researched examining environmental education in Indian institutions showed that environmental education significantly contributes to developing sustainability attitudes and responsible environmental behaviors among students. The study emphasized that education plays a key role in promoting sustainable lifestyles and ecological responsibility.

Khan, S., Nazneen, A., Singh, M., Ali, I. S., & Arafat, M. Y. (2025). A recent study conducted among Indian university students found that environmental awareness and sustainability education positively influence students' sustainable intentions and environmentally responsible decision-making. The findings suggest that educational institutions play a significant role in developing sustainable attitudes and behaviors among students.

Previous studies indicate that while many students are aware of environmental issues, there is often a gap between awareness and actual practice. This gap can be reduced through environmental education, campus sustainability initiatives, and active student participation in environmental programs.

Research Methodology

- **Research Design:** The study uses a descriptive research design to analyze the sustainable lifestyle practices among college students.
- **Data Collection:** Both primary and secondary data are used in the study. Primary data is collected through a questionnaire survey distributed to college students. Secondary data are collected from books, research articles, journals, and online sources related to sustainability and student behavior.
- **Sample Size:** The study includes responses from 99 college students selected from different academic programs.
- **Sampling Method:** Simple random sampling is used to select respondents.
- **Statistical Tools Used:** Descriptive Statistics, ANOVA test, Chi-Square Test, and Regression Analysis

Objectives of the Study

- To examine the level of environmental awareness among college students regarding sustainable lifestyle practices.
- To analyze the relationship between environmental awareness and the adoption of sustainable lifestyle practices among college students.

- To evaluate the role of educational institutions in promoting sustainable behaviors among students.

Hypotheses of the Study

H_01: There is no significant relationship between environmental awareness and the adoption of sustainable lifestyle practices among college students.

H_02: College students do not significantly practice sustainable behaviors such as recycling, plastic reduction, and resource conservation.

H_03: Educational institutions do not significantly influence students' adoption of sustainable lifestyle practices.

Data Analysis

H_01: There is no significant relationship between environmental awareness and the adoption of sustainable lifestyle practices among college students.

Descriptive Statistics

To understand the overall level of environmental awareness and sustainable lifestyle adoption among college students, the mean scores were calculated.

Variable	Mean Score	Interpretation
Environmental Awareness	3.84	High awareness
Sustainable Lifestyle Adoption	3.75	Moderately high adoption

Source: Primary Data

Interpretation

- The mean environmental awareness score of 3.84 indicates that students have a good level of awareness about environmental issues and sustainability concepts.

- The mean adoption score of 3.75 suggests that students fairly practice sustainable lifestyle habits, though there is still scope for improvement.

Anova Single Factor

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	27.26162	9	3.029068	3.851944	8.27E-05	1.889417
Within Groups	770.6465	980	0.786374			
Total	797.9081	989				

Source: Primary Data

Interpretation

The p-value (0.0000827) is less than 0.05, the null hypothesis is rejected, indicating that there is a significant relationship between environmental awareness and the adoption of sustainable lifestyle practices among college students.

Regression Analysis

Model

- Independent Variable → Environmental Awareness
- Dependent Variable → Sustainable Lifestyle Adoption

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error
1	0.658	0.433	0.427	0.49

Source: Primary Data

Interpretation

- R = 0.658 indicates a strong positive relationship.

- R^2 = 0.433 means 43.3% of the variation in sustainable lifestyle practices is explained by environmental awareness.

ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.92	1	17.92	74.18	0.000
Residual	23.45	97	0.24		
Total	41.37	98			

Source: Primary Data

Interpretation

- F = 74.18 and p = 0.000 (< 0.05). This indicates that the regression model is statistically significant.

Coefficients Table

Variable	B	Std. Error	t	Sig.
Constant	1.356	0.277	4.895	0.000
Environmental Awareness	0.603	0.070	8.613	0.000

Source: Primary Data

Regression Equation

Sustainable Lifestyle Adoption= 1.356 + 0.603(Environmental Awareness)

Interpretation

Since **$p < 0.05$**, H_0 is rejected. Environmental awareness significantly predicts sustainable lifestyle practices. For every 1 unit increase in awareness, sustainable behavior increases by 0.603 units. Environmental awareness significantly influences the adoption of sustainable lifestyle practices among college students.

- **Chi-Square Test of Association**

Students were categorized into Low, Moderate, and High awareness and adoption levels.

Crosstabulation

Environmental Awareness	Low Adoption	Moderate Adoption	High Adoption	Total
Low	27	6	1	34
Moderate	9	21	4	34
High	5	10	16	31
Total	41	37	21	99

Chi-Square Test

Test	Value	df	Sig.
Pearson Chi-Square	47.93	4	0.000

Source: Primary Data

Interpretation

Chi-Square value = 47.93, p-value = 0.000 (< 0.05). This indicates a significant association between environmental awareness and sustainable lifestyle practices. Students with higher environmental awareness are more likely to adopt sustainable behaviors such as recycling, reducing plastic use, and conserving resources.

H_02: College students do not significantly practice sustainable behaviors such as recycling, plastic reduction, and resource conservation.

Descriptive Statistics

Sustainable Behaviour Item	Mean	Std. Dev.	Min	Max
Reduce single-use plastic	3.78	0.96	1	5
Separate recyclable waste	3.55	1.03	1	5
Use reusable bags/bottles	3.71	0.99	1	5
Conserve electricity	3.98	0.92	1	5
Conserve water	3.90	0.93	1	5
Use public transport/walking	3.81	0.95	1	5
Avoid wasting food	**4.13**	0.85	1	5

Participate in sustainability activities	3.66	1.02	1	5
Support eco-friendly products	**3.45**	1.01	1	5
Encourage others to adopt sustainability	3.69	0.97	1	5

Source: Primary Data

Interpretation

The mean values range from 3.45 to 4.13, indicating that students practice sustainable lifestyle behaviours to a moderate to high degree.

Anova Single Factor

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	36.24343	9	4.027048	5.559094	1.68E-07	1.889417
Within Groups	709.9192	980	0.724407			
Total	746.1626	989				

Source: Primary Data

Interpretation

The ANOVA results show that the calculated F-value (5.559) is greater than the F critical value (1.889), and the p-value (1.68E-07) is less than 0.05. Therefore, the null hypothesis (H_0) is rejected. This indicates that college students practice sustainable behaviors such as recycling, reducing plastic use, and conserving resources.

- **Chi-Square Test**

To examine whether gender is associated with levels of sustainable behaviour, responses were grouped into Low, Moderate, and High sustainability practice levels.

Crosstabulation

Gender	Low	Moderate	High	Total
Female	1	22	44	67
Male	0	14	18	32

Chi-Square Test

Test	Value	df	p-value
Pearson Chi-Square	1.49	2	0.474

Source: Primary Data

Interpretation

Since p > 0.05, gender is not significantly associated with sustainable lifestyle practices. Both male and female students exhibit similar levels of sustainability behaviour.

Regression Analysis

Regression was used to test whether overall sustainable behaviour predicts encouraging others to adopt sustainable lifestyles.

Model Summary

R	R²	Adjusted R²
0.738	0.544	0.539

This means 54.4% of the variation in encouraging others is explained by sustainable practices.

ANOVA (Regression Model)

Source	F	Sig.
Regression	115.7	0.000

Coefficients

Variable	B	T	Sig.
Constant	-0.423	-1.094	0.277
Sustainable Behaviour Score	1.092	10.755	0.000

Source: Primary Data

Regression Equation

Encouraging Sustainability= -0.423 + 1.092 (Sustainable Behaviour Score)

Interpretation

Since the p-value from the regression is <0.05, sustainable behaviours significantly influence students' promotion of sustainability.

H₀3: Educational institutions do not significantly influence students' adoption of sustainable lifestyle practices.

Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**0.665**	**0.442**	0.437	0.602

Source: Primary Data

Interpretation

- The R value (0.665) indicates a moderate to strong relationship between institutional initiatives and sustainable lifestyle adoption.
- R^2 = 0.442 means that 44.2% of the variance in students' sustainable lifestyle practices is explained by educational institutional influence.

ANOVA Test

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	27.93	1	27.93	76.98	0.000
Residual	35.19	97	0.36		
Total	63.12	98			

Source: Primary Data

Interpretation

The ANOVA results show that the regression model is statistically significant:

- $F_{(1,97)}$ = 76.98 and p = 0.000 (<0.05)

This indicates that educational institutions significantly influence students' adoption of sustainable lifestyle practices.

Regression Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	0.742	0.311		2.38	0.019
Institutional Sustainability Influence	0.841	0.096	0.665	8.77	0.000

Source: Primary Data

Interpretation

The regression coefficient (β = 0.841) indicates a positive and significant impact of educational institutions on students' sustainable lifestyle practices.

Since p < 0.05, the null hypothesis is rejected, and the research hypothesis is supported.

Conclusion and Suggestions

This study studied college students' sustainable lifestyle choices and educational institutions' promotion of them. With a mean score of 3.84, college students are environmentally aware. This implies that most kids understand pollution, climate change, and resource conservation.

A mean score of 3.75 indicates that students practise sustainable lifestyle behaviours to a moderate extent. Many responders reduced single-use plastic, conserved power and water, used public transit, and avoided food waste. Sustainability actions, including supporting eco-friendly products and trash segregation, were less common, showing that awareness does not always lead to action. Statistical experiments demonstrated that environmental knowledge strongly influences the adoption of sustainable lifestyles among college students. The regression analysis indicated that environmental knowledge explains much of the variation in sustainable behaviour. Awareness and sustainable activities were also significantly correlated by ANOVA and Chi-square testing.

The study also indicated that schools promote sustainable behaviour in kids. Environmental awareness programs, green campus events, and sustainability talks encourage students to adopt green behaviours. Institutional influence accounts for 44.2% of students' sustainable lifestyle choices, according to regression analysis. The findings indicate that college students can serve as change agents promoting sustainability. Students can help safeguard the environment and create a greener future with educational institutions, awareness programs, and infrastructure.

According to the study, several initiatives can be adopted to encourage sustainable lifestyles among college students. Sustainability should be integrated into academic curricula across fields to improve environmental education. This will assist pupils comprehend environmental challenges and live responsibly. Additionally, institutions should hold frequent environmental awareness programs, seminars, and workshops on climate change, waste management, and sustainable consumption. Such programs can assist students develop sustainable environmental habits. Institutions should also promote trash segregation, recycling, energy-efficient infrastructure, water conservation, and tree planting. Recycling bins, water-saving devices, and bicycle parking can help students make sustainable decisions. Since practical involvement can modify behaviour, colleges should encourage student participation in environmental clubs, sustainability initiatives, and community-based environmental activities. Students can also participate in sustainability campaigns and environmental volunteerism through collaboration with environmental organisations, NGOs, and government agencies.

Digital platforms and social media can also raise student awareness and promote sustainable lifestyles. Educational institutions can encourage environmental responsibility through online campaigns and interactive activities. These metrics can help colleges shape students' attitudes and behaviours towards sustainability and help construct a more ecologically responsible and sustainable future.

Future Scope

- Future studies can include a larger sample size from different universities or regions.
- Comparative studies can analyze differences in sustainability practices among various academic disciplines.
- Researchers can examine long-term changes in students' environmental behavior through longitudinal studies.
- Further research can explore the impact of institutional initiatives such as green campuses and sustainability programs.
- Future studies may also analyze the role of social media, technology and awareness campaigns in promoting sustainable lifestyles.

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