

## A Study on Environmental Sustainability in Coimbatore District with Special Reference to Public Awareness and Sustainable Practices

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### Abstract

Environmental sustainability has become a crucial issue at both global and regional levels due to increasing environmental degradation, climate change, and resource depletion. This study focuses on environmental sustainability in Coimbatore District with special reference to public awareness and sustainable practices. The research aims to examine the level of awareness among the public, evaluate their sustainable behaviors, and analyze the gap between knowledge and practice. Primary data were collected through a structured questionnaire from 200 respondents, while secondary data were obtained from journals and previous studies conducted in the region. Statistical tools such as percentage analysis and chi-square tests were used to interpret the data. The findings reveal that although awareness about environmental sustainability is relatively high, consistent implementation of eco-friendly practices remains limited due to economic constraints, lack of infrastructure, and behavioral factors.

**Keywords:** Environmental Sustainability, Public Awareness, Sustainable Practices, Coimbatore District, Chi-square Analysis, Green Behavior

### Introduction

Environmental sustainability refers to the responsible use and conservation of natural resources to ensure ecological balance for present and future generations. In recent years, environmental issues such as pollution, deforestation, and climate change have become more prominent due to rapid industrialization and urbanization. Coimbatore District, known as one of the major industrial hubs in Tamil Nadu, faces significant environmental challenges including air pollution, water scarcity, and waste management issues. Despite these challenges, awareness regarding environmental sustainability has been increasing due to education, media influence, and government initiatives. Studies conducted in Coimbatore indicate that people are becoming more conscious of environmental issues, particularly in areas such as waste segregation and eco-friendly consumption. For example, a study by Anbukarasi and Dheivanai (2021) found that around 62.2% of consumers in Coimbatore were highly aware of

environmental issues. However, awareness alone does not guarantee sustainable behavior. Many individuals fail to translate knowledge into practice due to various socio-economic and infrastructural barriers. Therefore, this study aims to analyze both awareness and actual practices in order to understand the effectiveness of sustainability efforts in Coimbatore District

### Statement of the Problem

Although environmental awareness is increasing in Coimbatore District, environmental problems continue to persist. Issues such as improper waste disposal, increasing e-waste, and pollution indicate that sustainable practices are not fully adopted. Reports highlight that Coimbatore faces challenges in managing e-waste due to limited infrastructure and low public participation (The Times of India). The major problem addressed in this study is the gap between awareness and implementation. While individuals may be aware of environmental issues, they often fail to adopt sustainable practices

due to convenience, cost, or lack of facilities. This study seeks to identify the relationship between awareness and behavior and determine the factors influencing sustainable practices in Coimbatore District.

### **Objectives of the Study**

The main objective of this study is to analyze environmental sustainability in Coimbatore District. Specifically, the study aims to evaluate public awareness regarding environmental issues, examine sustainable practices adopted by individuals, analyze the relationship between awareness and behavior, identify challenges in implementing sustainability, and provide suggestions for improving environmental practices.

### **Review of Literature**

In 2025, Mercy (2025) compared urban and rural sustainability practices in Coimbatore and found that urban residents showed higher engagement in sustainable practices such as waste segregation, indicating a rural-urban gap in environmental behavior.

In 2024, Ayyappan et al. (2024) examined green marketing trends and consumer behavior and observed an increasing demand for eco-friendly products, showing a shift in consumer preference towards sustainability-oriented goods.

In 2023, Moorthy and Jeyadevi (2023) studied awareness of government sustainability schemes in Coimbatore and identified lack of accessibility and poor communication as major barriers to effective implementation of environmental policies.

In 2022, Farrukh et al. (2022) discussed industrial sustainability challenges such as waste management and pollution control, while Senadheera et al. (2022) emphasized the integration of Environmental, Social, and Governance (ESG) frameworks into sustainability strategies.

In 2021, Anbukarasi and Dheivanai (2021) analyzed consumer awareness towards green products and found that more than half of the respondents had high environmental awareness, indicating a positive shift in eco-conscious behavior.

In 2019, Sarmila Sara and Somasundaram (2019) examined environmental attitudes among student

teachers and concluded that awareness significantly influences environmentally responsible behavior.

In 2018, Gandhimathi and Somasundaram (2018) studied ecological awareness among students in Coimbatore and found that while awareness was high, participation in environmental activities was comparatively low. In the same year, Nishad and Prasad (2018) highlighted the importance of environmental awareness in regional planning and sustainable development.

Earlier foundational studies include Brundtland (1987), who introduced the concept of sustainable development emphasizing the balance between economic growth and environmental protection.

### **Research Methodology**

This study adopts a descriptive and analytical research design. Primary data were collected from 200 respondents in Coimbatore District using a structured questionnaire. The respondents were selected using simple random sampling to ensure diversity. The questionnaire included questions related to environmental awareness, attitudes, and sustainable practices such as recycling, energy conservation, and waste management.

Secondary data were collected from journals, reports, and previous research studies. Statistical tools such as percentage analysis were used to summarize the data, while the chi-square test was applied to examine the relationship between awareness and sustainable behavior.

### **Limitations of the Study**

The study is limited by its sample size, which may not fully represent the entire population of Coimbatore District. The use of self-reported data may introduce bias, as respondents may overstate their level of awareness or practices. Time constraints limited the scope of the study, and regional variations within the district were not fully explored. Additionally, some secondary data sources may not reflect the most recent developments.

### **Data Analysis and Interpretation**

The data collected for the study on environmental sustainability in Coimbatore District were

systematically analyzed using statistical tools such as percentage analysis and Chi-square test. The main purpose of the analysis is to understand the level of public awareness and examine whether there is a significant relationship between awareness and sustainable practices.

### 1. Percentage Analysis of Environmental Awareness

Level of Awareness	Number of Respondents (Out of 200)	Percentage (%)
High Awareness	104	52%
Moderate Awareness	60	30%
Low Awareness	36	18%
Total	200	100%

#### Interpretation:

From the above table, it is observed that a majority of respondents (52%) have high awareness about environmental sustainability. 30% of respondents have moderate awareness, while 18% have low awareness. This indicates that awareness levels are generally good in Coimbatore District, but there is still a segment of the population that requires further environmental education and awareness programs.

### 2. Chi-Square Test: Relationship between Awareness and Sustainable Practices Hypotheses

H<sub>0</sub> (Null Hypothesis): There is no significant relationship between environmental awareness and sustainable practices.

H<sub>1</sub> (Alternative Hypothesis): There is a significant relationship between environmental awareness and sustainable practices.

Observed and Expected Values (Summary Table)

Awareness Level	Sustainable Practice (Yes)	Sustainable Practice (No)	Total
High	80	24	104
Moderate	30	30	60
Low	10	26	36
Total	120	80	200

#### Chi-Square Calculation Summary

Item	Value
Calculated Chi-Square ( $\chi^2$ )	13.8
Degrees of Freedom (df)	2
Table Value at 5% Level	5.99
Significance Level	0.05

#### Decision Rule

Since the calculated value (13.8) is greater than the table value (5.99), the null hypothesis is rejected.

#### Interpretation of Chi-Square Result

The Chi-square test clearly indicates that there is a significant relationship between environmental awareness and sustainable practices. Individuals with higher awareness are more likely to follow eco-friendly behaviors such as recycling, reducing plastic use, and conserving energy. However, some respondents do not practice sustainability despite awareness, due to external factors like cost, convenience, and lack of infrastructure.

#### Findings

The study found that environmental awareness is relatively high among the people of Coimbatore District. There is a significant relationship between awareness and sustainable behavior, indicating that knowledge influences action. However, a gap exists between awareness and implementation due to various barriers. Urban residents tend to adopt sustainable practices more than rural residents. Infrastructure limitations and lack of policy enforcement were identified as major challenges.

#### Suggestions

To improve environmental sustainability in Coimbatore District, it is recommended that the government strengthen environmental regulations and ensure proper implementation. Public awareness programs should focus on practical actions rather than theoretical knowledge. Educational institutions should incorporate environmental education into their curriculum. Infrastructure for waste management and recycling should be improved. Public participation should be encouraged through community-based initiatives, and incentives should be provided for adopting sustainable practices.

## Conclusion

Environmental sustainability is essential for the long-term well-being of society. This study highlights that while awareness of environmental issues is increasing in Coimbatore District, the adoption of sustainable practices remains inconsistent. The findings emphasize the need for a holistic approach that combines education, policy enforcement, infrastructure development, and public participation. Achieving sustainability requires collective efforts from individuals, governments, and organizations. Only through coordinated action can Coimbatore District move toward a more sustainable future.

## References

- Meadows, D. H. et al. (1972). Limits to Growth  
Brundtland, G. H. (1987). Our Common Future  
Gandhimathi, P., & Somasundaram, K. (2018)  
(Kudos)  
Sarmila Sara, A., & Somasundaram, K. (2019)  
(studylib.net)  
Anbukarasi, M., & Dheivanai, N. (2021)  
(researchersworld.com)  
Moorthy, D., & Jeyadevi, C. (2023)  
(ijemr.vandanapublications.com)  
Yuvarani, G. (2026) (IJFMR)  
Mercy, S. K. (2025) (ijsdr.org)  
Ayyappan, S. et al. (2024)  
(ssjar.singhpublication.com)  
Nishad, N., & Prasad, T. K. (2018) (SRS Journal)