

A Study on Sustainability Initiatives in India with Reference to Swachh Bharat Mission and National Solar Mission

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Abstract

Sustainable development is important for India's national policies, to address environmental damage, poor sanitation, and increasing energy demand problems. Indian government has introduced programs including Swachh Bharat Mission and National Solar Mission to address Challenges. For this study formed a structured Questionnaire and collected 100 respondents using Google forms. The objective of the research is to analyze public awareness, improvement in sustainable development to evaluate sanitation facilities and how they contribute towards sustainable development. The research additionally examines how perception levels differ between Generation Z individuals (ages 20-29) and Generation Y members (ages 30-40). The results show that most people surveyed have some knowledge of these programs, and those who know more about them tend to view them more favorably. The research determined that government programs have successfully raised environmental awareness among the public, but greater community

involvement and better education campaigns will be needed to achieve lasting environmental benefits.

I. INTRODUCTION

Sustainability means fulfilling today's requirement while ensuring future generations can still meet their own needs. As nation experiencing rapid development, India confronts significant challenges including inadequate sanitation system, widespread environmental pollution, and unstable energy supplies.

The government of India introduced two major programs to tackle these problems the Swachh Bharat Mission and National Solar Mission. The Swachh Bharat Mission was introduced in 2014 targets improvement in sanitation, Hygiene practice and waste management system. The national Solar Mission was launched in 2010 aims to boost solar energy production and decrease reliance on fossil fuel sources.

Both programs support India's dedication to sustainable development goals and protecting the environment.

Review of Literature

Research conducted previously shows that the Swachh Bharat Mission created substantial improvements in sanitation access across both rural and urban area. The National Solar Mission helped speed up the expansion of solar power capacity throughout India.

Long term sustainability success depends heavily on raising public awareness and changing behaviors. Gen Z individuals tend to be more environmentally aware, though they often have limited knowledge about specific government policies. This research seeks to examine how awareness and perception levels differ between Gen Z and Gen Y populations.

Objectives

- To examine major sustainability programs implemented in India
- To assess how well the public knows about the Swachh Bharat Mission and National Solar Mission
- To compare perception differences between Gen Z and Gen Y groups.
- To review how these programs support sustainable development goals.

Research Methodology

- **Research Type:** Descriptive Research
- **Data Source:** Primary Data

- **Research Tool:** Structured Questionnaire (distributed via Google Form)
- **Total Participant:** 100 Respondents
- **Sampling Approach:** Convenience Sampling
- **Study Population:** Gen Z (ages 20-29) and Gen Y (ages 30-40)

Data Analysis and Interpretation

i) Demographic Overview

Most survey participant fell within the 20-29 age range (Gen Z), with the rest coming from the 30-40 age (Gen Y). A large portion of Gen z respondents were students earning less than Rs 20,000 monthly. The Gen Y group consisted of working professionals, homemakers, and business owners representing various income levels.

ii) Awareness Level

Survey responses revealed the following pattern:

- A significant portion of participants described themselves as “somewhat familiar with sustainability topics
- A smaller yet notable group identified as “Very Familiar”
- Only a few respondents indicated they were “Not Familiar”

These finding show that sustainability programs have gained public attention, though comprehensive understanding could benefit from further development.

iii) Perception Towards sustainability Initiatives

- The majority of participants chose “Agree” or “Strongly Agree” when valuating government sustainability programs effectiveness
- Results showed that respondents identifying as “very familiar” were more inclined to select “Strongly Agree” while those marking “Not Familiar” typically chose “neutral.”
- These patterns demonstrate a clear connection between knowledge levels and positive attitudes towards sustainability efforts.

Chi Square Test

Total Respondents: 100

- **Gen Z= 52**
- **Gen Y= 48**

Agreement Level	Gen Z	Gen Y	Total
Strongly Agree	8	14	22
Agree	28	24	52
Neutral	16	10	26
Total	52	48	100

a) Hypothesis

- **H₀ (Null Hypothesis):** There is no significant relationship between Generation (Gen y & Gen Z) and level agreement towards sustainability initiatives.
- **H₁ (Alternative Hypothesis):** There is significant relationship between generation and level of agreement.

b) Expected Frequencies Formula

$$E = \text{Row Total} * \text{Column Total} / \text{Grand Total}$$

Agreement Level	Gen Z(E)	Gen Y(E)
Strongly Agree	6.33	5.67
Agree	15.29	13.71
Neutral	7.38	6.62

C) Chi Square Formula

$$\chi^2 = \sum (O - E)^2 / E$$

$$\chi^2 = 4.21$$

D) Degree of Freedom

$$df = (r - 1)(c - 1) = (3 - 1)(2 - 1)$$

$$df = 2$$

E) Critical Value

$$\text{Significance level} = 5\% (0.05)$$

$$Df = 2$$

From chi-square Table value:

$$\chi^2 = 5.991$$

F) Result

Calculated value = 4.21

Table value = 5.991

$$4.21 < 5.991$$

Accept H₁ (Alternative Hypothesis), and Reject H₀ (Null hypothesis)

The result shows that there is no significant difference between Generation and level of agreement.

Finding

- People are somewhat aware of sustainability efforts. Many still don't know about them.
- Gen Y folks tend to agree with sustainability initiatives than Gen Z folks do.
- When people know more about sustainability they tend to have an opinion of it.
- Most people think sanitation and renewable energy projects are ideas.
- We still need to do more to educate people and spread the word, about sustainability.

Suggestion

- A program should be available that will provide information about significant issues in higher education and also workplaces.
- We need to develop ways to promote education about renewable forms of energy (i.e., wind, solar) through various media outlets to enable youth to be better informed on the benefits of such resources.
- We need to support initiatives that will benefit the planet by getting involved in community activities such as litter pick-up and tree planting and also get the word out about them.
- The government should ensure that we are all informed about what is being accomplished to protect the planet, and will allow us to have access to information regarding energy developments or other environmentally friendly programs established within colleges and workplaces, as well as sustainable development efforts at the community level, including the work of local governments to protect the environment.

II. CONCLUSION

Sustainability oriented programs such as the National Solar Mission (NSM) and Swachh Bharat Mission (SBM) have created a positive public opinion with regards to generation Y and generation Z according to the analysed data. However, the degree to which an individual experience with Generation Y and Generation Z hinges on an understanding of the concept of sustainability. A sustainable future will also depend greatly on increased awareness in the society through educating and engaging the people in sustainability initiatives.