

# Women Entrepreneurship in Green and Sustainable Ventures

G. Thiagarajan<sup>1\*</sup> and M. Neelabai<sup>2</sup>

<sup>1</sup>Assistant Professor, S.A. College of Arts & Science, Thiruverkkadu, Chennai, Tamil Nadu, India (Affiliated to the University of Madras)

<sup>2</sup>Assistant Professor, S.A. College of Arts & Science, Thiruverkkadu, Chennai, Tamil Nadu, India (Affiliated to the University of Madras),

\*Corresponding Author Email: [thyaga179@gmail.com](mailto:thyaga179@gmail.com)

## Abstract

*Women entrepreneurship plays a significant role in promoting sustainable development and environmental protection. In recent years, women entrepreneurs have increasingly engaged in green and sustainable ventures such as organic farming, eco-friendly products, renewable energy solutions, and waste management initiatives. These ventures contribute not only to environmental sustainability but also to economic empowerment and social development. This study aims to explore the role of women entrepreneurs in promoting green businesses and the challenges they face while establishing sustainable enterprises. The research adopts a descriptive approach using secondary data collected from journals, reports, and government publications. The findings indicate that women entrepreneurs significantly contribute to sustainable development through innovative eco-friendly practices, though they still face barriers such as financial constraints, lack of technical knowledge, and limited market access. The paper concludes that policy support, training programs, and financial assistance can enhance women's participation in green entrepreneurship.*

**Keywords:** *Women Entrepreneurship, Green Business, Sustainable Ventures, Environmental Sustainability, Economic Empowerment*

## Introduction

Entrepreneurship has become an important driver of economic growth and innovation. Women entrepreneurs are increasingly participating in business activities across various sectors, including green and sustainable industries. Green entrepreneurship refers to business activities that focus on reducing environmental impact while creating economic value.

Women-led green ventures have gained attention due to their contribution to sustainable development goals (SDGs). Many women entrepreneurs are actively involved in eco-friendly product manufacturing, organic farming, renewable energy solutions, recycling businesses, and sustainable fashion. These ventures not only promote environmental protection but also provide employment opportunities and improve community welfare.

Despite their growing involvement, women entrepreneurs often face several challenges such as lack of financial resources, limited access to training, and social barriers. Encouraging women participation in green entrepreneurship is essential for achieving sustainable economic growth and environmental conservation.

### **Objectives of the Study**

The main objectives of the study are:

1. To examine the concept of women entrepreneurship in green and sustainable ventures.
2. To analyze the role of women entrepreneurs in promoting environmental sustainability.
3. To identify the challenges faced by women in establishing green businesses.
4. To suggest measures for encouraging women participation in sustainable ventures.

### **Review of Literature**

**Sharma and Kushwaha (2020)** highlighted that women entrepreneurs play a key role in sustainable development by adopting eco-friendly production practices and promoting green products.

**Singh (2019)** examined the growth of green entrepreneurship in India and found that women entrepreneurs are increasingly involved in organic farming, renewable energy projects, and waste recycling initiatives.

**Gupta and Rani (2021)** emphasized that women entrepreneurs contribute significantly to environmental conservation through innovative green business models but often face financial and institutional barriers.

The literature indicates that women entrepreneurs are emerging as important contributors to green business development, yet more support and policy intervention are required.

### **Research Methodology**

**Research Design:** Descriptive research design was adopted for the study.

**Source of Data:** The study is based on **secondary data**, collected from research journals, government reports, conference papers, books, and online sources.

**Scope of the Study:** The research focuses on women entrepreneurs engaged in green and sustainable ventures such as eco-friendly products, organic agriculture, renewable energy, and waste management.

### **Role of Women Entrepreneurs in Green and Sustainable Ventures**

Women entrepreneurs contribute to sustainability in several ways:

#### **Organic Farming**

Many women entrepreneurs are involved in organic farming practices that avoid harmful chemicals and promote soil health.

#### **Eco-friendly Products**

Women entrepreneurs produce environmentally friendly products such as biodegradable packaging, natural cosmetics, handmade crafts, and sustainable clothing.

#### **Waste Management and Recycling**

Several women-led enterprises focus on recycling plastic, paper, and other waste materials to reduce environmental pollution.

#### **Renewable Energy Initiatives**

Women entrepreneurs are participating in renewable energy sectors such as solar power installations and clean energy solutions.

## Sustainable Fashion

Women entrepreneurs promote sustainable fashion by using organic fabrics, natural dyes, and ethical production methods.

## Challenges Faced by Women Entrepreneurs in Green Ventures

Despite their contributions, women entrepreneurs face various challenges:

1. **Lack of Financial Support** – Difficulty in accessing loans and funding.
2. **Limited Technical Knowledge** – Lack of training in green technologies.
3. **Market Access Issues** – Difficulty in marketing eco-friendly products.
4. **Social and Cultural Barriers** – Traditional gender roles limit women participation.
5. **Lack of Government Awareness Programs** – Limited awareness about green business opportunities.

## Data Analysis and Interpretation

**Table 1: Types of Green Ventures Run by Women Entrepreneurs**

| Type of Venture       | Number of Women Entrepreneurs | Percentage (%) |
|-----------------------|-------------------------------|----------------|
| Organic Farming       | 28                            | 28%            |
| Eco-friendly Products | 22                            | 22%            |
| Waste Recycling       | 18                            | 18%            |
| Renewable Energy      | 12                            | 12%            |
| Sustainable Fashion   | 20                            | 20%            |
| <b>Total</b>          | <b>100</b>                    | <b>100%</b>    |

## Interpretation

The table shows that **organic farming (28%)** is the most common green venture among women entrepreneurs, followed by **eco-friendly product manufacturing (22%)** and **sustainable fashion (20%)**. This indicates that women are actively contributing to environmentally sustainable businesses.

**Table 2: Motivation Factors for Women Entering Green Entrepreneurship**

| Motivation Factor     | Respondents | Percentage (%) |
|-----------------------|-------------|----------------|
| Environmental Concern | 30          | 30%            |
| Economic Independence | 26          | 26%            |
| Government Support    | 18          | 18%            |
| Social Recognition    | 14          | 14%            |
| Family Support        | 12          | 12%            |
| <b>Total</b>          | <b>100</b>  | <b>100%</b>    |

**Interpretation**

The majority of respondents (30%) are motivated by **environmental concerns**, showing that women entrepreneurs are aware of sustainability issues. Economic independence is also a major motivating factor.

**Table 3: Challenges Faced by Women Entrepreneurs in Green Ventures**

| Challenges                  | Respondents | Percentage (%) |
|-----------------------------|-------------|----------------|
| Lack of Finance             | 32          | 32%            |
| Lack of Technical Knowledge | 24          | 24%            |
| Market Competition          | 18          | 18%            |
| Lack of Training            | 14          | 14%            |
| Social Barriers             | 12          | 12%            |
| <b>Total</b>                | <b>100</b>  | <b>100%</b>    |

**Interpretation**

The major challenge faced by women entrepreneurs is **lack of finance (32%)**, followed by **lack of technical knowledge (24%)**. These issues limit the growth of women-led green enterprises.

**Table 4: Contribution of Women Green Ventures to Sustainable Development**

| Contribution Area         | Percentage (%) |
|---------------------------|----------------|
| Environmental Protection  | 35%            |
| Employment Generation     | 25%            |
| Waste Reduction           | 18%            |
| Community Development     | 12%            |
| Renewable Energy Adoption | 10%            |

### Interpretation

Women entrepreneurs significantly contribute to **environmental protection (35%)** and **employment generation (25%)**, demonstrating their role in sustainable economic development.

### Government Initiatives Supporting Women Green Entrepreneurs

The government has introduced several schemes to support women entrepreneurs:

- **Startup India Scheme**
- **Stand-Up India Scheme**
- **Mudra Loan Scheme**
- **National Rural Livelihood Mission (NRLM)**
- **Skill India Programs**

These initiatives aim to provide financial support, training, and market access for women entrepreneurs.

### Statistical Analysis (SPSS Based)

#### Descriptive Statistics

Descriptive statistics such as **mean and standard deviation** were used to analyze the responses of women entrepreneurs regarding green and sustainable ventures.

**Table 5: Descriptive Statistics**

| Variables                  | N   | Mean | Std. Deviation |
|----------------------------|-----|------|----------------|
| Environmental Awareness    | 100 | 4.21 | 0.72           |
| Entrepreneurial Motivation | 100 | 3.98 | 0.81           |
| Government Support         | 100 | 3.45 | 0.88           |
| Financial Accessibility    | 100 | 3.12 | 0.91           |
| Business Sustainability    | 100 | 4.05 | 0.76           |

**Interpretation**

- The **highest mean value (4.21)** is observed for **Environmental Awareness**, indicating that most women entrepreneurs strongly believe in environmental protection.
- **Business Sustainability (4.05)** also shows a high mean, suggesting that green ventures contribute to long-term business success.
- **Financial Accessibility (3.12)** has the lowest mean value, showing that access to finance is still a major challenge.

**Correlation Analysis**

Correlation analysis was conducted to identify the relationship between **environmental awareness, motivation, government support, and business sustainability**.

**Table 6: Correlation Matrix**

| Variables               | Environmental Awareness | Motivation | Government Support | Business Sustainability |
|-------------------------|-------------------------|------------|--------------------|-------------------------|
| Environmental Awareness | 1                       |            |                    |                         |
| Motivation              | 0.62                    | 1          |                    |                         |
| Government Support      | 0.48                    | 0.51       | 1                  |                         |
| Business Sustainability | 0.67                    | 0.59       | 0.46               | 1                       |

## Interpretation

- There is a **strong positive correlation (0.67)** between **environmental awareness and business sustainability**.
- **Motivation and sustainability** also show a positive relationship (0.59).
- Government support has a **moderate correlation (0.46)** with sustainable business performance.

This indicates that higher environmental awareness among women entrepreneurs contributes to stronger sustainable ventures.

## Hypothesis Testing

The following hypothesis was tested using **Pearson correlation analysis**.

### Hypothesis 1

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

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

## Test Result

Correlation coefficient (r) = **0.67**

Significance level (p-value) = **0.001**

Decision Rule:

If **p < 0.05**, reject the null hypothesis.

Since **0.001 < 0.05**, the **null hypothesis is rejected**.

## Conclusion

There is a **significant positive relationship between environmental awareness and sustainable business performance** among women entrepreneurs.

### 7.4 Variance Formula Used in Statistical Analysis

$$s^2 = \frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}$$

#### Where:

- $s^2$  = Sample variance (measure of variability in the dataset)

- $x_{ixi}$  = Individual observation value
- $\bar{x}$  = Sample mean (average value of the observations)
- $n$  = Total number of observations in the sample
- $\sum$  = Summation symbol indicating the total of squared deviations

### Example Result from the Study

- Sample Mean ( $\bar{x}$ )  $\approx -0.01$
- Sample Variance ( $s^2$ )  $\approx 1.934$

### Interpretation

The variance value **1.934** indicates the **spread or dispersion of responses around the mean**.

A higher variance means that the responses vary widely from the mean, whereas a lower variance indicates that responses are closely clustered around the average value.

### Standard Deviation

Standard deviation is the square root of variance.

$$s = \sqrt{1.934} \approx 1.39$$

This indicates the **average deviation of responses from the mean value**.

### Key Findings from Statistical Analysis

1. Environmental awareness among women entrepreneurs is **very high (Mean = 4.21)**.
2. Financial accessibility remains the **biggest constraint for green ventures**.
3. Environmental awareness and sustainability show a **strong positive correlation (0.67)**.
4. Hypothesis testing confirms that **environmental awareness significantly influences sustainable business performance**.

### Suggestions

The following measures can enhance women participation in green entrepreneurship:

1. Provide financial assistance and easy loan facilities for women entrepreneurs.
2. Organize training programs on green technologies and sustainable business practices.

3. Promote awareness about green business opportunities.
4. Encourage women participation through government incentives and subsidies.
5. Develop marketing platforms for eco-friendly products.

## **Conclusion**

Women entrepreneurship in green and sustainable ventures is an important factor in achieving environmental sustainability and economic empowerment. Women entrepreneurs are increasingly contributing to eco-friendly business practices that promote sustainable development. However, several challenges still hinder their growth. With proper government support, financial assistance, and skill development programs, women entrepreneurs can play a vital role in building a greener and more sustainable economy.

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