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# A Study on Consumer Buying Behavior and Factors Influencing the Adoption of Coir-Based Sustainable Products in Agriculture

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**Abstract**— Sustainable agriculture has become more significant because of growing environmental issues, overuse of chemical fertilizers and pesticides, and the increasing use of plastic in farming.

Coir-based products, such as coir pith, coir pots, and grow bags, are eco-friendly alternatives that help maintain soil health, protect water, and support sustainable farming. This conceptual research paper explores consumer buying behavior and the factors that influence the acceptance of coir-based sustainable products in agriculture, with special reference to Rudra Agro Company.

The study aims to understand how factors like awareness, price, quality, availability, environmental awareness, and perceived benefits affect consumer purchasing decisions.

It also looks at the role of sustainable agriculture and attitudes towards eco-friendly agricultural inputs. Based on existing literature and conceptual analysis, the study finds that awareness and environmental awareness positively influence adoption, but high costs and limited availability act as major barriers.

The study concludes that coir-based products have strong market potential as sustainable agricultural solutions.

Effective awareness campaigns, demonstration activities, improved distribution, and affordable marketing strategies can help increase consumer adoption and promote long-term market growth.

**Keywords**—: Consumer Buying Behavior, Coir Products, Sustainable Agriculture, Eco-Friendly Products, Adoption Behavior, Agricultural Marketing

## I. INTRODUCTION

Agriculture is a vital pillar of the Indian economy, contributing to employment, food security, and rural development.

However, the increasing use of chemical fertilizers, pesticides, and plastic-based agricultural products has led to environmental problems such as soil degradation, water pollution, and loss of ecological balance. These issues have made the need for sustainable and environmentally responsible agricultural practices more urgent.

Coir-based products have gained importance as eco-friendly alternatives in modern agriculture and horticulture.

Coir is a natural fiber extracted from coconut husk and is widely available in India. Products like coir pith, coir pots, grow bags, mulch mats, and erosion control blankets are becoming more popular because of their biodegradability, water retention ability, and ability to improve soil quality.

Understanding consumer buying behavior is important for the adoption of sustainable products.

Farmers, nursery owners, and home gardeners consider factors like price, quality, awareness, availability, and environmental benefits when purchasing agricultural products. Gaining insights into these behavioral factors is essential to increase the adoption of coir-based products.

This conceptual study examines the factors that influence consumer buying behavior in relation to coir-based sustainable products, with special reference to Rudra Agro Company.



## II. STATEMENT OF THE PROBLEM

Despite the environmental and agricultural benefits of coir-based products, their adoption among farmers and agricultural consumers remains limited.

Many consumers continue to use traditional soil materials and plastic-based alternatives due to a lack of awareness, high cost, limited availability, and resistance to change.

The problem lies in understanding why consumers hesitate to adopt sustainable agricultural products even when they are aware of environmental concerns.

Therefore, it is important to analyze consumer buying behavior and identify the factors influencing the adoption of coir-based products in agriculture.

## III. OBJECTIVES OF THE STUDY

1.To understand the concept of consumer buying behavior in agriculture.

2.To study the level of awareness about coir-based sustainable products.

3.To analyze the factors influencing the adoption of coir products.

4.To examine the role of price, quality, and availability in purchasing decisions.

5.To study consumer attitudes toward eco-friendly agricultural products.

6.To suggest measures for increasing the adoption of coir-based products.

## IV. REVIEW OF LITERATURE

### **Ajzen (1991)**

Ajzen's Theory of Planned Behavior explains that consumer attitudes, social influence, and perceived behavioral control play a major role in the adoption of sustainable products.

### **Coir Board of India (2023)**

The report highlights the growing global demand for coir-based agricultural products due to their biodegradability, water retention, and environmental sustainability.

### **Prabhu and Avanthi (2015)**

The study confirms that coir-based products are biodegradable and improve soil microbial activity, making them suitable for sustainable agricultural practices.

### **Verma (2017)**

The researcher found that Indian farmers are highly price-sensitive and often prioritize short-term costs over long-term environmental and economic benefits.

### **Rogers (2003)**

Rogers' Diffusion of Innovation Theory explains that the adoption of new agricultural products depends on factors such as relative advantage, compatibility, complexity, trialability, and observability.

### **Das and Nair (2019)**

The study emphasizes that awareness programs and demonstration activities significantly improve the adoption of eco-friendly agricultural inputs among small-scale farmers

## V. CONCEPTUAL FRAMEWORK

The conceptual framework explains the relationship between factors influencing consumer behavior and the adoption of coir-based products.

### Independent Variables

- \* Awareness Level
- \* Price Sensitivity
- \* Product Quality
- \* Availability
- \* Environmental Consciousness
- \* Perceived Benefits

Dependent Variable

Adoption of Coir-Based Products

The framework suggests that factors like consumer awareness, environmental concern, product quality, and accessibility positively influence the adoption of coir-based products.

In contrast, high price and limited availability have a negative impact on purchase decisions.

## VI. THEORETICAL DISCUSSION

### Consumer Buying Behavior

Consumer buying behavior refers to the process through which individuals identify needs, search for information, evaluate alternatives, make purchase decisions, and assess post-purchase satisfaction.

In agriculture, farmers and gardeners consider various economic and environmental factors before deciding to buy agricultural inputs.

### Awareness and Adoption

Awareness is one of the most important factors that influence the adoption of sustainable products. Consumers who are aware of the benefits of coir products are more likely to use them. Lack of awareness can reduce consumer confidence and increase resistance to new products.

### Price Sensitivity

Price has a major impact on purchasing decisions in the agricultural sector.

Many farmers prioritize affordability over environmental sustainability. Although coir products offer long-term benefits, their higher initial cost may discourage adoption.

### Environmental Consciousness

Increasing concern for environmental protection has led to higher demand for eco-friendly products. Consumers who value sustainability are more likely to choose biodegradable alternatives like coir products.

### Product Quality and Availability

Consumers prefer products that are durable, effective, and easily accessible.

However, the limited availability of coir products in rural markets hampers their adoption.

## VII. RESEARCH METHODOLOGY

I. THE STUDY IS CONCEPTUAL AND DESCRIPTIVE IN NATURE. IT IS BASED ON SECONDARY DATA.

The study is based on conceptual and descriptive methods. The research has used secondary data from various sources, including:

- \* Research journals
- \* Books
- \* Government reports
- \* Publications from the Coir Board
- \* Studies on sustainable agriculture
- \* Online academic resources

The research explores how consumers make buying decisions and what factors influence the acceptance of coir products, relying on existing literature and general understanding.

## VIII. FINDINGS OF THE STUDY

1. Products made from coir are becoming more accepted as alternatives in sustainable agriculture.
2. Awareness among consumers plays a key role in their decision to use coir products.
3. Price is a major consideration when consumers choose to buy coir products.
4. Consumers appreciate coir products because they are eco-friendly and help retain water.
5. A lack of awareness and limited availability of coir products limits their adoption.
6. Having a positive attitude toward sustainability does not always translate into buying coir products.
7. Showing practical benefits through demonstration programs helps build consumer trust.
8. Being environmentally conscious enhances the perception of coir products among consumers.
9. Farmers tend to choose products that offer better long-term economic gains.
10. Coir products have good potential in the market for sustainable agricultural practices.



#### IX. SUGGESTIONS

1. Organize awareness programs and training for farmers and gardeners.
2. Conduct demonstration sessions to show the real benefits of coir products.
3. Work on improving the availability of coir products in rural areas.
  4. Offer subsidies and incentives to lower the cost of coir products.
5. Highlight the long-term economic and environmental benefits of coir products.
6. Use digital marketing and social media to educate consumers.
7. Partner with agricultural officers and non-governmental organizations.
8. Develop coir products that are affordable for small-scale farmers.
9. Support eco-friendly branding and sustainable certification.
10. Enhance systems for collecting customer feedback to improve product quality

#### X. CONCLUSION

Products made from coir provide important environmental and agricultural benefits and have a strong potential to support sustainable farming methods.

The study shows that consumer buying behavior is influenced by awareness, price, product quality, environmental concerns, and product availability.

Even though consumers generally like eco-friendly products, high price, low awareness, and limited availability prevent widespread use.

As a result, organizations like Rudra Agro Company should focus on awareness programs, cost reduction, demonstration activities, and better distribution strategies to increase market reach.

The study concludes that coir-based products can become a key part of sustainable agriculture if supported by effective marketing, education, and supportive policies.

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