



## Responsible Consumption under SDG-12 Influencing the Adoption of Eco-Friendly Palmyrah Products in Southern Tamil Nadu

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***Abstract:** Responsible consumption has been identified as one of the factors that have driven sustainable development, not only in the context of Sustainable Development Goal-12 (SDG-12) that encourages responsible consumption and production practices. Among the products that have long been known to have ecologically efficacious advantages are palmyrah products. Yet despite the sustainable qualities possessed by such products, the level of their consumption remains low among society. The current research explores the impact of responsible consumption related to SDG-12 on the consumption of palmyrah ecological products by community members in Southern Tamil Nadu. This study is conducted using a quantitative research methodology and primary data collected from 200 consumers via a structured questionnaire. The results of the study have been analyzed using SPSS and correlation, reliability, correlation, and multiple regression analyses. The results indicate that consumers have been found to have a strong degree of awareness regarding responsible consumption and a positive attitude towards environmentally friendly palmyrah products. Also, the results of correlation and regression analyses indicate that responsible consumption under SDG-12 plays an influential role in deciding palmyrah products adoption by consumers. Factors such as exposure to social media, peer influence, and support have been proven to be important in shaping the adoption decisions of consumers. The conclusion of the study is that the promotion of responsible consumption for the achievement of SDG-12 can improve the acceptance level of the traditional ecologically-friendly product. The result provides significant implications for the promotion of the traditional product through the responsible consumption approach.*

***Keywords:** Responsible Consumption; SDG-12; Eco-Friendly Products; Palmyrah Products; Consumer Adoption; Sustainable Development.*

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## 1. INTRODUCTION

Sustainable development has increasingly become one of the foremost needs for the whole world, given the rising threats of climate change and the depletion of natural resources. Currently, there has been a rising focus from production-based sustainable developments to consumption-based responsible consumption. The Sustainable Development Goals proposed by the United Nations provide an appropriate solution to the aforementioned challenges with a clear emphasis on SDG-12 to ensure sustainable consumption and production patterns [1]. Responsible consumption: The idea encompasses environmentally responsible consumption practices and the avoidance of waste as well as the selectiveness of pro-environmental and socially responsible consumer products.

Among ecologically and conventional items, the position of palmyrah items is distinctive because of its being biodegradable, having a small environmental footprint, cultural acceptability, and contribution to rural livelihoods. It has been pointed out in studies that the items like jaggery, neera, and other value-added items of palmyrah possess nutritional, functional, as well as sustainability advantages, making them suitable alternate options to the conventional industrial items [2], [3]. Even with the above-mentioned properties, the consumer demand for market acceptance of palmyrah items has remained quite limited.

The relevance of SDG-12 resides in its accent on converting consumption patterns by encouraging consumers to adopt conscious, responsible, and sustainable choices. Recently, studies show that consumer awareness, social influence, environmental beliefs, and value play an immense part in shaping Green Purchase Intentions [4]–[8]. Systematic reviews and meta-analysis show that responsible consumption actions possess a pivotal influence in favor of eco-friendly adoption, especially in developing nations [9], [10]. There is an immense need to empirically validate the conversation of wake-up calls on SDG-12 into responsible adoption actions by consumers.

In the Indian context, particularly in Southern Tamil Nadu, products made up of palmyrah are in close integration with local economy and industry. Though recent literature in the Indian context has explored the concept of green consumption and living [11], the present study finds that very limited literature is available where the impact of responsible consumption motivated by goal SDG-12 on the adoption of traditional environmental products such as products of palmyrah has been explored. The available literature mainly centers on generalized green products, consumers in metropolitan areas, and industrial environmental products without giving much emphasis to local traditional products and rural value chains pertaining to environmental industries respectively [12], [13].

Hence, the research problem that guided this study is the lack of empirical evidences regarding the role that responsible consumption, as guided by principles stipulated in SDG-12, plays in influencing consumer adoption of eco-friendly palmyrah products in Southern Tamil Nadu. Addressing this gap would be critical towards promoting sustainable consumption practices, strengthening traditional industries, and aligning local consumption behaviors with global goals on sustainability.

### 1.2 Objectives of the Study

The study based on the context outlined above, attempts to:

- To analyze the awareness on responsible consumption among consumers in Southern Tamil Nadu.
- Analyze the impact of SDG-12-oriented responsible consumption on consumer adoption of eco-friendly palmyrah products.

- Identify the key behavioural factors affecting consumer adoption of palmyrah products.
- Provide policy-oriented recommendations on how responsible consumption can be enhanced, with the promotion of traditional environmentally friendly products.

## 2. RESEARCH METHODOLOGY

The research study follows a quantitative research approach with a descriptive and analytical methodology. The research study is empirical in nature. The research study analyzes the effect of responsible consumption under the framework of SDG-12 on the adoption of eco-friendly palmyrah products.

The study area is identified as certain districts of the Southern parts of Tamil Nadu. This is because the palmyrah product acquires certain cultural significance for the region. The sample of 200 is selected through convenience sampling. The selected sample is considered adequate for the correlation and multiple regression analysis. This is because it meets the minimum requirement of empirical studies of consumer behaviour.

The primary data was gathered through a structured questionnaire containing variables for responsible consumption, adoption variables, and factors that influence. The scale to measure responses was a Likert scale consisting of five points ranging from Strongly Disagree to Strongly Agree. The data was analyzed through SPSS software by employing techniques of descriptive statistics, reliability analysis, correlation, and regression.

## 3. THEORY AND CALCULATION

The current research is theoretically framed with Sustainable Development Goal-12 (SDG-12) because it mainly focusses on consumer responsibility and consumption patterns to achieve environmental sustainability and effectively manage natural resources. The consumer acts as a key player in meeting SDG-12 by using environment-friendly and traditional consumer goods. This research has theoretical underpinnings from the Theory of Planned Behaviour (TPB) and Value–Belief–Norm (VBN) Theory. Under TPB, consumer behavior is shaped by attitudes, subjective norms, and perceived behavior control. Ecologically responsible consumer awareness increases positive attitudes towards environmental products. Social and institutional factors influence positive subjective norms that promote environment-saving shopping practices. Also, according to VBN theory, environmental values and norms of responsible conduct drive consumers towards ecologically responsible practices. With these theoretical orientations, responsible consumption under the context of SDG-12 becomes the independent variable that impacts the adoption of eco-friendly palmyrah products by consumers as the dependent variable. Factors that affect consumer behavior, such as exposure to social media, social influences, and support, are the supporting variables. Model Specification

**In** Consumer Adoption = f(Responsible Consumption, Influencing Factors)

Calculation of Composite Scores

**The composite mean scores used in the empirical analysis were derived as follows:**

**Responsible Consumption (RC\_MEAN) = Mean of RC1 to RC7**

**Consumer Adoption (AD\_MEAN) = Mean of AD1 to AD8**

**IF\_MEAN = Mean of IF1 to IF4**

**These composite indicators were employed for correlation and multiple regression analyses.**

#### 4. HYPOTHESES DEVELOPMENT

Based on SDG-12 and supported by the TPB and the VBN theory, responsible consumption is expected to influence consumer adoption of eco-friendly products. TPB suggests that positive attitude and perceived behavioural control enhance adoption behaviour, while VBN theory points to moral responsibility and environmental values as drivers of sustainable consumption. Moreover, the impact of social influence, media exposure, and institutional support on bolstering the intentions of consumers to adopt eco-friendly and traditional products is generally acknowledged. For this reason, the following hypotheses have been advanced for empirical testing:

H1: Responsible consumption under SDG-12 significantly influences the consumer to adopt eco-friendly palmyrah products.

H2: Exposure to social media, peer influence, and institutional support significantly affect the adoption of eco-friendly palmyrah products by consumers.

#### 5. RESULTS AND INTERPRETATION

Table 1: Reliability Analysis

Construct	No. of Items	Cronbach's Alpha
Responsible Consumption	7	0.82
Consumer Adoption	8	0.85
Influencing Factors	4	0.78

Interpretation:

The Cronbach's Alpha values are above the acceptable threshold of 0.70, indicating good internal consistency and reliability of the measurement scales.

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation
Responsible Consumption	3.99	0.31
Consumer Adoption	3.98	0.27
Influencing Factors	3.97	0.41

Interpretation: Results show a very good awareness of responsible consumption and a favourable adoption of the eco-friendly palmyrah products.

Table 3: Correlation Analysis

Variables	r-value	Significance
Responsible Consumption ↔ Consumer Adoption	0.63	p < 0.01

Interpretation:

A positive and statistically significant relationship is noticed between responsible consumption under SDG-12 and consumer adoption of eco-friendly palmyrah products.

Table 4: Multiple Regression Analysis

#### Regression Coefficients

Predictor	$\beta$	t-value	Significance
Responsible Consumption	0.48	6.12	p < 0.01
Influencing Factors	0.31	4.27	p < 0.01

#### Model Summary

R <sup>2</sup>	F-value	Significance
0.52	41.68	p < 0.01

Interpretation:

Significant influence on the consumer's adoption of eco-friendly palmyrah products is brought out under responsible consumption in SDG-12. The model explains 52% of the variation in adoption behavior and hence has strong explanatory power.

## 6. CONCLUSION AND POLICY IMPLICATIONS

### 6.1 Conclusion

The impact of responsible consumption associated with Sustainable Development Goal-12 (SDG-12) on the adoption of eco-friendly palmyrah products is examined. The research is conducted using primary data collected from 200 respondents. The results are produced using SPSS. The research offers empirical evidence about the significance of sustainability-conscious consumer behavior for the promotion of eco-friendly products.

The results bring out that consumers are highly aware of responsible consumption, as evident by their demand for natural and environment-friendly products. The outcome of the correlation analysis and regression analysis supports that responsible consumption acts as a significant and major positive determinant of consumers adopting palmyrah products. The hypothesis appears to be true as the variables like impact factors, as well as social exposures, have shown importance in determining consumer behaviour related to adopting palmyrah products.

Conclusion by way of proof of the study is that it shows that consumers applying consumer behavior along with the principles of SDG-12 help improve the market acceptance of such products such as palmyrah, which are eco-friendly and contribute to the socio-economic benefit of the region. This study makes an important contribution to the existing literature by applying the concept of responsible consumption to eco-friendly products.

## 6.2 Policy Implications

From the results, the following policy recommendations can be drawn:

### 1. Enhancing SDG

The government organizations and institutions of education must conduct awareness campaigns about responsible consumption and SDG-12, focusing on the advantages of products from our traditional eco-friendly products, such as palmyrah products.

### 2. Traditional Eco-Friendly Industries

The policy initiatives must be aimed at popularizing industries based on the palmyrah tree through subsidies, marketing, as well as adding value to the products.

### 3. Promotion through Digital and Social Media Platforms

Given the impact of social influence on adoption behavior, social platforms and social networks could be utilized by policymakers and cooperatives in promoting products of palmyrah as an alternative to processed products since they are an environmental product.

### 4. Eco-Labeling

The introduction of ecolabels and quality certifications for palmyrah products may increase the level of consumer confidence and strengthen the beliefs regarding environmental responsibility, which may further lead to a rise in the adoption rate.

### 5. Integration with Sustainable Consumption Policies

The above data highlights that the traditional products need to be specifically incorporated in the policies of sustainable consumption and production in the context of SDG12.

## 6.3 Scope for Future Research

For future studies, the research can be extended by introducing a larger sample size, a comparison between regions, or a longitudinal model to analyze the evolution of consumer behavior through time. For further research, mediating factors like environmental attitude, value, and willingness to pay may be used to acquire a deeper understanding of sustainable consumer behavior.

## 7. DECLARATIONS

### 7.1 Study Limitations

The present study focuses on the consumers in the selected districts of Southern Tamil Nadu. The study uses the convenience sampling technique. Hence, the research findings cannot be generalised to other parts of the world. The study uses self-reported data. The data collected might have respondent bias.

### 7.2 Acknowledgements

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### 7.3 Funding Source

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### Competing Interests

“The author states that no competing interests are associated with this work.”

### 7.4 Ethical

The research was done in a way that upholds ethical research practices. Personal identifiers are not collected from the respondents.

### 7.5 Informed

Consent from the participants was obtained before carrying out the study, and this study was voluntary.

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