



CONSUMER AWARENESS, PREFERENCES AND ADOPTION OF BANANA FIBER PRODUCTS AS ECO-FRIENDLY ALTERNATIVES

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ABSTRACT

In recent years, increasing environmental concerns and the growing need for sustainable alternatives have encouraged consumers and businesses to shift toward eco-friendly products. Among such alternatives, banana fiber products have gained importance due to their biodegradable nature, natural availability, and potential to replace conventional non-eco-friendly materials. The significance of this study lies in understanding how consumers perceive banana fiber products and eco-friendly products in terms of awareness, usage preference, purchasing behavior, willingness to pay, and adoption barriers. The scope of the study focuses on assessing consumer acceptance of banana fiber products and identifying the factors that can support their wider market adoption.

The study is based on primary data collected from 86 respondents through a structured questionnaire. A descriptive research methodology was adopted to analyze consumer responses. The collected data were evaluated using percentage analysis and presented through graphical tools such as bar graphs and pie charts. The study examined five major aspects: awareness of banana fiber products, frequency of purchasing eco-friendly products, willingness to pay a premium, preferred usage areas, and perceived barriers to adoption.

The findings reveal that awareness of banana fiber products is still developing. While 29.1% of respondents were moderately aware, 43.0% were either less aware or not aware, indicating a significant awareness gap. Only 27.9% of respondents were aware or highly aware of banana fiber products. In terms of purchasing behavior, 50.0% of respondents reported buying eco-friendly products only sometimes, while 25.6% purchased them often, showing that eco-friendly consumption exists but is not yet a regular habit. The willingness-to-pay results indicate a positive consumer attitude, as 38.4% of respondents were willing to pay a 5%–9% premium, 34.9% were willing to pay 10%–25%, and only 7.0% were unwilling to pay any premium.

The graph on preferred usage areas shows that banana fiber products have the highest acceptance in cafés and restaurants, with 30.9% preference, followed by home usage at 27.7%, gifting purposes at 21.4%, and office use at 20.0%. These results suggest that banana fiber products have scope in both commercial and household markets. However, the adoption of eco-friendly products is mainly restricted by lack of awareness, reported by 43.0% of respondents, followed by limited availability at 30.2% and high cost at 19.8%. Quality concerns were comparatively low at 7.0%, indicating that product reliability is not the major issue among respondents.

The study concludes that banana fiber and eco-friendly products have promising market potential, especially in hospitality, household, and gifting segments. However, wider adoption depends on improving consumer awareness, increasing product availability, and maintaining reasonable pricing. The findings highlight that awareness campaigns, effective marketing strategies, product accessibility, and value-based positioning can play an important role in converting occasional interest into regular sustainable purchasing behavior.

1.1 INTRODUCTION

In today's market, sustainability has become an important factor shaping consumer choices and product innovation. Growing concern over environmental issues, plastic waste, and non-biodegradable materials has encouraged the search for natural and eco-friendly alternatives. Banana fiber is one such sustainable material, as it is obtained from the pseudo-stem of the banana plant, which is often considered agricultural waste. Its biodegradable, renewable, and durable nature makes it suitable for developing products used in homes, cafés, restaurants, offices, and gifting purposes.

The significance of this study lies in understanding the market potential of banana fiber products as practical eco-friendly alternatives. Although consumers are becoming more conscious of sustainable products, their actual adoption depends on factors such as product awareness, price acceptance, availability, usage preference, and perceived barriers. Therefore, examining consumer responses toward banana fiber products can provide valuable insights into their acceptance and future demand.



Banana Pseudo stem

Figure 1.1

The scope of this study is limited to analyzing consumer perception toward banana fiber and eco-friendly products. It highlights how consumers respond to sustainable alternatives and identifies the key factors that may encourage or restrict their adoption in the market.

1.2 Review of Related Literature

Ashok and Aswathanarayana (2018) studied consumer awareness and buying behaviour toward eco-friendly products. The study found that a majority of respondents were aware of eco-friendly products available in the market and showed interest in purchasing them to reduce environmental pollution. The authors highlighted that although environmental awareness among consumers was increasing, actual demand for eco-friendly products had not grown as expected. The study revealed that barriers such as lack of awareness, limited visibility, and inadequate promotion affected the conversion of green intentions into actual purchase behaviour. It also emphasized that government agencies and marketers should take stronger initiatives to promote eco-friendly products through awareness campaigns, supportive policies, quality maintenance, and distinctive packaging.

Kumar (2021) studied the buying behaviour of consumers toward eco-friendly products. The study was conducted in Kerala using data collected from 711 respondents across Kollam, Trivandrum, Ernakulam, and Alleppey. The researcher used convenience sampling, frequency distribution, percentage analysis, exploratory factor analysis, ANOVA, and correlation to examine consumer awareness, attitude, perception, and buying behaviour. The study found that product features, environmental concern, health consciousness, and personal values influenced consumers' buying behaviour toward eco-friendly products. It also revealed that consumer attitude, awareness, and perception were positively correlated. This study is relevant to the present research as it supports the analysis of consumer awareness, purchase behaviour, and adoption of eco-friendly products.

Iqbal et al. (2023) examined the industrial prospects of waste banana fibre and found that it had wide application potential in textiles, pulp and paper, sanitary products, food products, reinforced composites, construction materials, automobile components, aerospace materials, and other bio-based products. The study highlighted banana fibre as a sustainable resource that could support waste utilization and environmentally responsible production. This study is relevant to the present research as it supports the broader scope and market potential of banana fibre products across different sectors.

Agatha (2024) examined consumer willingness to pay a premium for green packaging. The study found that consumers showed a positive attitude toward sustainable packaging and were willing to pay an additional price for eco-friendly alternatives. The research also revealed that consumer awareness, pricing, perceived environmental benefits, and marketing communication played an important role in influencing the acceptance of green packaging. The study is relevant to the present research as it supports the analysis of consumers' willingness to pay a premium for eco-friendly and banana fiber products.

1.3 Objectives of the Study

1. To examine consumers' willingness to pay a premium for eco-friendly products.

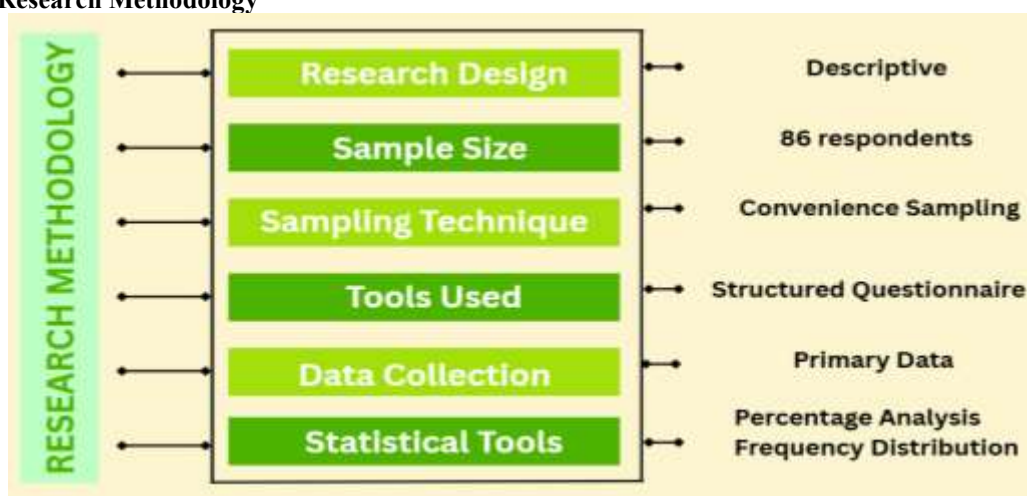


2. To analyze the frequency of consumer purchases of eco-friendly products.
3. To identify the preferred usage areas of banana fiber products among consumers.
4. To assess consumer awareness regarding banana fiber products.
5. To determine the major barriers influencing the adoption of eco-friendly products.

1.4 Research Questions

1. Consumers' willingness to pay a premium for eco-friendly products will contribute positively to the market acceptance of sustainable alternatives.
2. Frequent purchase of eco-friendly products will indicate a positive shift toward sustainable consumer behavior.
3. Identification of preferred usage areas for banana fiber products will help determine their potential application in commercial and household markets.
4. Consumer awareness regarding banana fiber products will positively influence their acceptance and adoption.
5. Identification of major barriers such as lack of awareness, limited availability, and high cost will help in developing effective strategies for promoting eco-friendly products.

1.5 Research Methodology

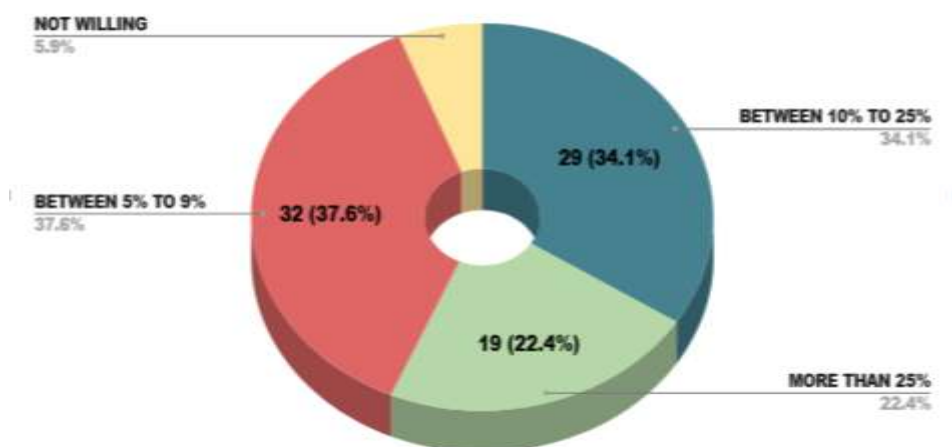


Research Methodology

Figure 1.2

1.6 Analysis and interpretation of Data and Dissection of Results:

1.6.1 Consumer Willingness to Pay for Eco-Friendly Products



Pie Chart showing Willingness to Pay Premium for Eco-Friendly Products

Figure 1.3

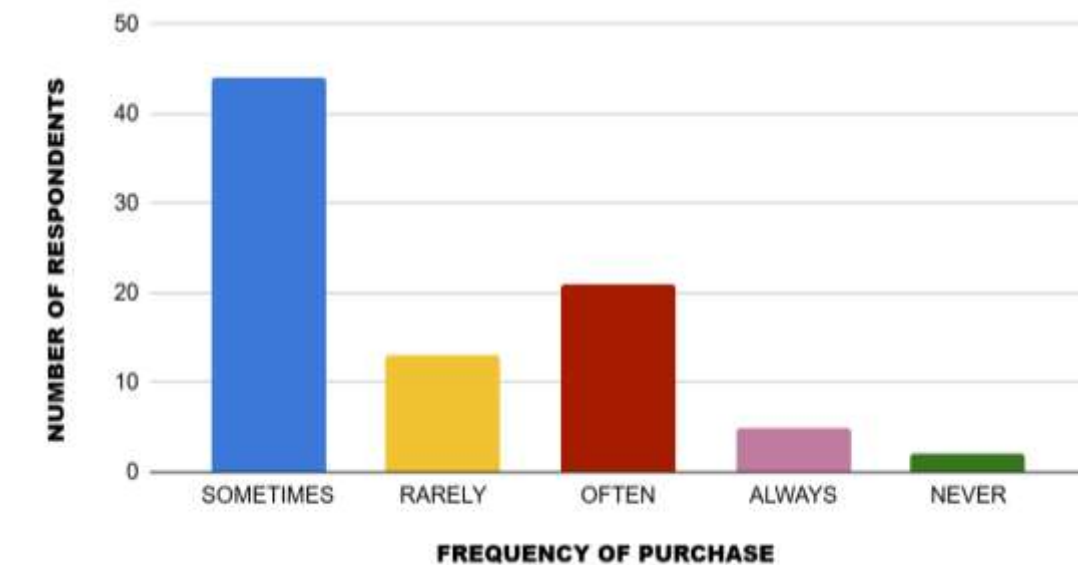
Analysis

The data shows that the largest share of respondents is willing to pay a **5%–9% premium** for eco-friendly products, with **33 respondents** selecting this option. This is closely followed by **30 respondents** who are willing to pay a higher premium of **10%–25%**. A smaller group of **17 respondents** indicated a willingness to pay **more than 25%**, while only **6 respondents** stated that they are not willing to pay any additional amount. Overall, the responses indicate a positive consumer attitude toward paying extra for eco-friendly products.

Interpretation

The findings suggest that most respondents are willing to pay a premium for eco-friendly products, especially within the moderate range of **5%–25%**. This reflects increasing acceptance of sustainable consumption, although consumers remain somewhat price-conscious. The respondents willing to pay **more than 25%** represent a smaller but strongly committed segment with a high level of environmental concern. On the other hand, the low number of respondents unwilling to pay any premium indicates limited resistance. Overall, the results show strong market potential for eco-friendly products, provided they are priced reasonably and offer clear value to consumers

1.6.2 Purchase Frequency of Eco-Friendly Products



Bar Graph showing Frequency of Purchase of Eco-Friendly Products

Figure 1.4

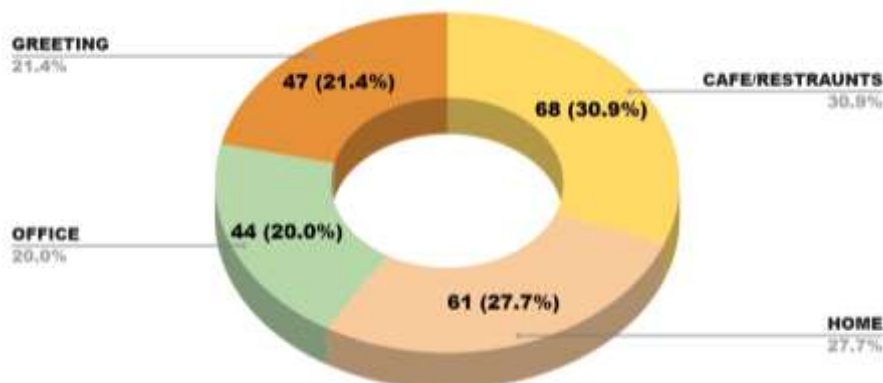
Analysis

The data shows that most respondents purchase eco-friendly products **“sometimes”** (43 out of 86), making it the most frequently selected response. This is followed by those who purchase them **“often”** (22 respondents), while **“rarely”** was chosen by 14 respondents. Only a small number of respondents reported purchasing eco-friendly products **“always”** (5), and just 2 respondents stated that they **“never”** purchase them. Overall, the responses indicate a moderate level of interest in eco-friendly products, but purchasing behavior remains irregular.

Interpretation

The findings suggest that respondents are generally aware of and open to eco-friendly products, but regular purchasing has not yet become a strong habit. The high number of **“sometimes”** responses shows that many consumers adopt eco-friendly products occasionally rather than consistently. The **“often”** category indicates a positive shift toward sustainable consumption, while the low number of **“always”** responses reflects limited long-term commitment. Overall, the results highlight good potential for growth, especially if businesses and policymakers focus on improving awareness, availability, affordability, and trust in eco-friendly products.

1.6.3 Preferred Usage Areas of Banana Fiber Products



Pie Chart Showing Preferred Usage Areas of Banana Fiber Products
Figure 1.5

Analysis

The pie chart shows respondents' preferred areas of use for banana fiber products. The highest preference was for **cafés and restaurants**, accounting for **30.9%** of responses. This indicates that respondents see strong potential for banana fiber products in commercial and hospitality spaces. **Home usage** followed closely at **27.7%**, showing considerable acceptance of these products for everyday household use.

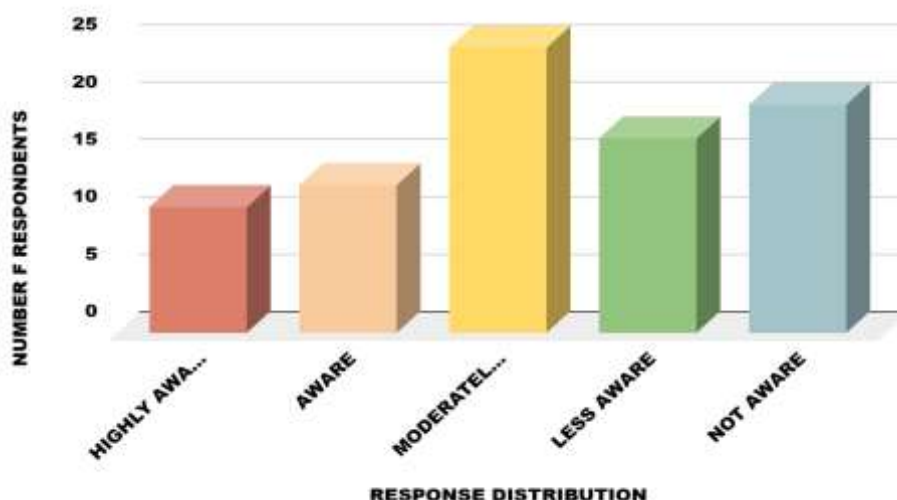
Gifting purposes accounted for **21.4%** of responses, suggesting that banana fiber products may also be attractive as eco-friendly and unique gift items. The **office segment** recorded the lowest share at **20.0%**, but it still represents a meaningful level of interest in professional settings.

Interpretation

The findings suggest that banana fiber products are perceived to be most suitable for **cafés and restaurants**, where eco-friendly and visually appealing products can add value to the customer experience. The strong preference for **home usage** reflects growing awareness and willingness among consumers to include sustainable alternatives in their daily lives.

The notable interest in **gifting** highlights an opportunity to promote banana fiber products as sustainable, creative, and aesthetically pleasing gift options. Although the preference for **office use** is comparatively lower, it still indicates potential for growth, especially through product customization, branding, and awareness-building. Overall, the results show that banana fiber products have potential across multiple usage areas, with the strongest opportunities in settings where sustainability, presentation, and practicality are important.

1.6.4 Consumer Awareness and Adoption of Banana Fiber Products



Bar Graph Showing Level of Awareness about Banana Fiber Products
Figure 1.6



Analysis

The bar graph shows the distribution of respondents according to their awareness of banana fiber products. The highest number of respondents falls under the “**Moderately Aware**” category, with **25 responses**. This is followed by “**Not Aware**” with **20 responses** and “**Less Aware**” with **17 responses**, indicating that a considerable portion of respondents has limited knowledge about banana fiber products.

In comparison, the “**Aware**” and “**Highly Aware**” categories recorded fewer responses, with **13** and **11 respondents** respectively. Overall, the data was collected from a total of **86 respondents**.

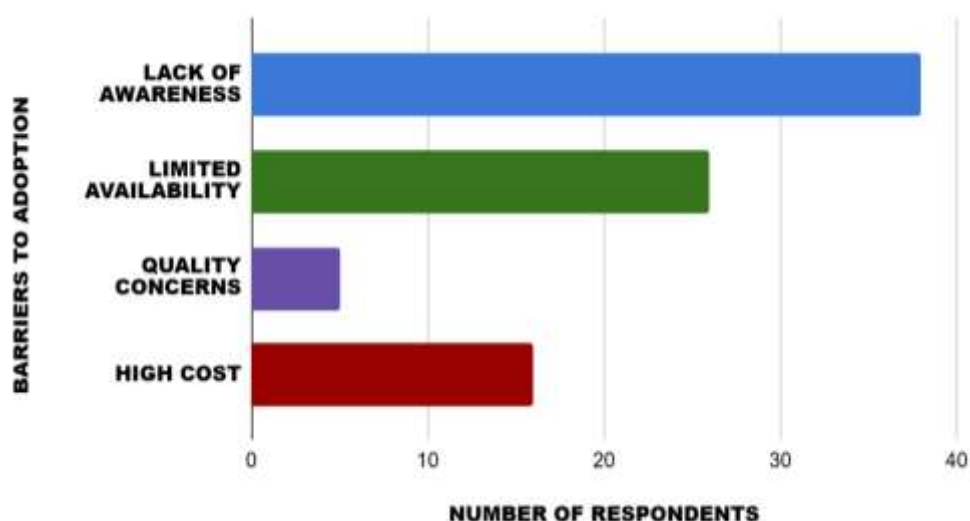
Interpretation

The findings indicate that awareness of banana fiber products among respondents is generally **moderate to low**. Although some respondents have a reasonable understanding of these products, a larger proportion either has limited awareness or is completely unaware of them.

The combined share of respondents in the “**Less Aware**” and “**Not Aware**” categories shows a noticeable gap in consumer knowledge. At the same time, the relatively smaller number of respondents in the “**Aware**” and “**Highly Aware**” categories suggests that strong awareness is still limited.

Overall, the results highlight the need for effective awareness campaigns, promotional activities, and educational initiatives. Improving consumer knowledge, product visibility, and information access could help increase acceptance and encourage wider adoption of banana fiber products.

1.6.5 Barriers to Adoption of Banana Fiber Products



Bar Graph Showing Perceived Barriers to Adoption of Eco-Friendly Products

Figure 1.7

Analysis

The data shows that the leading barrier to adopting eco-friendly products is **lack of awareness**, reported by **37 respondents**. This is followed by **limited availability**, with **26 respondents** identifying it as a challenge. **High cost** was mentioned by **17 respondents**, suggesting that price remains a concern for some consumers, though not the most significant one. **Quality concerns** received the lowest number of responses, with only **6 respondents** selecting this option. Overall, the results indicate that awareness and accessibility are the main obstacles affecting the adoption of eco-friendly products.

Interpretation

The findings suggest that inadequate awareness is the most important factor limiting the adoption of eco-friendly products. This highlights the need for stronger educational initiatives, promotional activities, and information-sharing efforts to improve consumer understanding. Limited availability also appears to be a major challenge, indicating that consumers may be willing to purchase eco-friendly products but face difficulties in accessing them. Although high cost remains a barrier for some respondents, it is less influential compared to awareness and availability. Quality concerns seem to have the least impact, suggesting that respondents may not strongly doubt



the performance of eco-friendly products. Overall, improving consumer awareness and ensuring better product availability could significantly encourage wider adoption of eco-friendly products.

1.7 Conclusions of the Study

1. Consumers show a positive attitude toward eco-friendly products, as most respondents are willing to purchase them and pay a premium for them.
2. Eco-friendly product purchasing is still occasional rather than regular, since the majority of respondents buy such products only “sometimes.”
3. Most consumers are price-sensitive but still willing to pay extra, especially within a moderate premium range of 5%–25%.
4. Banana fiber products have strong market potential, particularly in cafés/restaurants and home usage, where sustainability and presentation are valued.
5. Awareness of banana fiber products is moderate to low, indicating that many consumers still lack sufficient knowledge about these products.
6. Lack of awareness is the biggest barrier to adoption, followed by limited availability and high cost.
7. Limited availability affects consumer adoption, showing that even interested consumers may not purchase eco-friendly products if they are not easily accessible.
8. Quality concerns are comparatively low, suggesting that consumers do not strongly doubt the usefulness or reliability of eco-friendly products.
9. There is clear scope for market growth, provided companies focus on awareness campaigns, better availability, affordable pricing, and effective promotion.
10. Overall, banana fiber and eco-friendly products have promising future potential, but converting consumer interest into regular purchasing behavior requires improved awareness, accessibility, and value-based pricing.

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