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Consumer perception towards agri based biodegradable products in Hyderabad region

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Abstract
The increasing global awareness of environmental issues and the harmful impact of non-biodegradable products, such as plastics, has prompted a shift towards more sustainable alternatives. Biodegradable products, derived from natural materials like agricultural waste and starch have gained prominence as eco-friendly alternatives. This study focuses on consumer perceptions of agri-based biodegradable products in the Hyderabad region, India, where the government has initiated policies to phase out single-use plastics. The research analyzes the socio-economic profiles of consumers and their awareness and attitudes towards biodegradable products. Findings reveal that a majority of respondents are moderately aware of these products, and their perception is influenced by factors like price, quality, and reusability. Consumers primarily purchase biodegradable products from supermarkets and are motivated by their positive environmental impact. However, challenges include the availability of products and pricing. Overall, this study sheds light on the potential for biodegradable products in Hyderabad and highlights the importance of accessibility and affordability in driving consumer adoption.

Keywords: Biodegradable products, agricultural waste, consumer perception, Hyderabad

Introduction
In recent decades, the increasing awareness of environmental issues has led to a growing concern over the ecological impact of traditional and non-biodegradable products. Non-degradable products that include plastics, polystyrene and aluminium cans are ubiquitous as their usage and production are constantly increasing and accumulating in the environment. These products remain for hundreds of years in the environment and become toxic not only to the environment but also to humans (Shams, 2021) [4]. As a result, the global community has recognized that it is necessary to move environmentally friendly and sustainable alternatives. This understanding has resulted in a growing field of research and development for biodegradable products (Kaeb and Dammer, 2020) [2].

A biodegradable product is a material that can be decomposed by microorganisms into water, naturally occurring gases and biomass. Agri-based biodegradable products are made from natural materials such as agricultural waste, starch, and cellulose, which can be easily decomposed by natural processes (Song *et al*., 2009) [5]. These products are non-toxic, non-polluting, and do not release harmful chemicals into the environment. They are a sustainable alternative to conventional plastic products. These products can be used for a variety of purposes, including packaging materials, disposable cutlery, plates, and cups, as well as agricultural films, mulches and textiles.

Several countries have implemented regulations and policies to reduce the use of plastic products and promote the use of biodegradable products. The majority of the world's bioplastic production is seen in Asia (45%), Europe (25%), North America (18%) and South America (12%). The global biodegradable production capacity reached 2.11 million tonnes in 2020. The global market for biodegradable products which was USD 17.50 billion in 2022, is expected to reach USD 70.89 billion by 2030, growing at a CAGR of 19.11% from 2022 to 2030 (Grand View Research, 2020) [7].

The Indian market for agri based biodegradable products is still in its nascent stage but has significant growth potential. The government of India had modified the Plastic Waste Management Amendment Rules, 2021 to phase out single-use plastics (SUPs) by December 2022, which prohibited the manufacture, import, distribution and use of single-use plastics. With the sudden shift in policy by the Government of India, the path has been opened up for biodegradable products as a replacement for single-use plastics.

The increasing awareness and concern for environmental issues, coupled with the government's push for sustainable development, are driving the demand for biodegradable products in India. The biodegradable products are categorised into four segments in which biodegradable packaging (60%), consumer goods (14%), agricultural goods (12%) and others (14%) (Shaikh *et al*., 2021) [3].

The need to develop alternatives to plastics is gaining importance and there is a tremendous scope for biodegradable products in the Telangana state. Almost 20 per cent of waste generated in Hyderabad is plastic and residential areas generate around 365 tons per day of plastic waste, which could increase to 495 tons per day by 2025 if no proper measures are undertaken.

Biodegradable products are available at supermarkets, malls, retail shops, online and restaurants etc. Consumers decisions have changed towards products that are suitable and more environmentally friendly due to the rise in consumers' awareness of issues related to environment (Dzung *et al*., 2013) [8]. This research aims to analyse the perception of consumers towards agri based biodegradable products in Hyderabad region.

Objectives of the study

The following are the main objectives of this research.

- To study the socio-economic profile of the selected consumers.
- To examine the perception level of the consumers towards agri based biodegradable products in Hyderabad region.

Materials and Methods

The present study was focussed on individual consumers survey who were presumed to buy agri based biodegradable products and held in their decision-making when purchasing those products in Hyderabad region. The areas of Hyderabad are potential centres for biodegradable products and have the advantage of meeting the demand along with marketing facilities for biodegradable products. Hyderabad region consists of six zones, namely LB Nagar, Charminar, Khairtabad, Serlingampally, Kukatpally and Secunderabad. From the six zones, 20 households were selected from each zone by using a purposive sampling method. Thus, the sample consists of 120 respondents. The data was collected from the respondents with the help of pre-tested questionnaires via online (e-mail) and offline (In-person) methods. The data was summarized, tabulated and analysed using statistical tools like averages, percentages, arithmetic mean etc. to achieve relevant findings.

Results and Discussion

The results are divided into two segments for ease of analysis and outline the research objectives. At first, the researcher discussed about the socio-economic profile and awareness of biodegradable products for the study. Later discussed about consumer perception towards agri based biodegradable products. The results are mainly obtained from the data which was collected from the respondents to know their opinion about agri based biodegradable products.

Socio-economic profile of respondents

The following table shows the demographic profile of the respondents.

Table 1: Gender of the respondents

S. No	Gender	Respondents	Percentage
1.	Male	77	64.20
2.	Female	43	35.80
	Total	120	100.00

It is explored that more than half (64.20%) of the respondents were male followed by female respondents (35.80%) respectively.

Table 2: Age of the respondents

S. No.	Age	Respondents	Percentage
1.	Below 20 years	14	11.70
2.	20 to 40 years	77	64.16
3.	40 to 60 years	29	24.16
	Total	120	100.00

It is examined that 64.16% of the respondents are between the age group of 20 to 40 years, 24.16% of the respondents are between the age group of 40 to 60 years and around 11.70% of the respondents are in the age group less than 20 years.

Table 3: Occupation of the respondents

S. No.	Occupation	Respondents	Percentage
1.	Private employee	40	33.33
2.	Student	42	35.00
3.	Self-employed	22	18.30
4.	Homemakers	16	13.33
	Total	120	100.00

It is evident that more than 35.00% are students, nearly 33.33% are private employees, 18.30% of respondents own a business and the remaining 13.33% are homemakers.

Table 4: Source of information of the respondents

S. No.	Source of information	Respondents	Percentage
1.	Audiovisual	38	31.66
2.	Internet	24	20.00
3.	Malls/shops	28	23.33
4.	Newspaper advertisement	18	15.00
5.	Personal sources	12	12.00
	Total	120	100.00

It was observed that the consumers got information about biodegradable products from different sources. Among them, Audiovisual was one of the important sources of information for about 31.66 per cent of respondents followed by the Internet (20.00%), Malls or shops (23.33%), Newspaper advertisement (15.00%) and personal sources (12.00%) like friend/family.

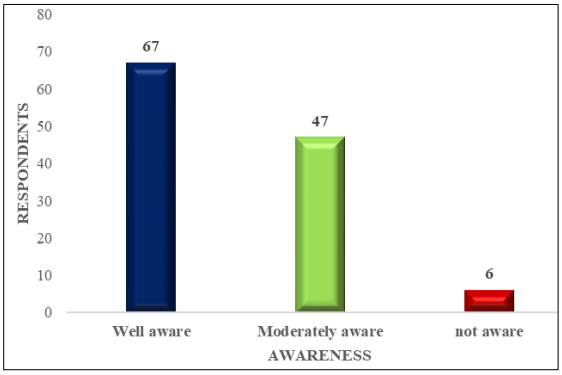

Chart 1: Awareness of respondents about biodegradable products

Respondents are categorized based on their awareness of biodegradable products. Most of the consumers are well aware (55.80%), some of the respondents are moderately aware (39.20%) and few of them (5.00%) are not aware of these products.

Consumer perception towards biodegradable products

Table 5: Frequency of buying biodegradable products by respondents.

S. No.	Frequency of buying	Respondents	Percentage
1.	Once a month	53	44.2
2.	Once a fortnight	40	33.3
3.	Once a week	16	13.3
4.	Not at all brought	11	9.2
5.	Total	120	100

The frequency of buying is around 44.20% of these respondents are buying biodegradable products at least once a month and 33.30% of respondents are buying these products less than once a fortnight. 13.30% of respondents buy products once a week and still another 9.20% of them have not bought any product at all.

Table 6: Preferred place to buy biodegradable products.

S. No.	Preferred place	Respondents	Percentage
1.	Online	14	11.60
2.	Local shops	33	27.50
3.	Malls	18	15.00
4.	Supermarket	52	43.30
5	others	3	2.60
	Total	120	100

The majority of respondents (43.3%) prefer buying biodegradable products from supermarkets. Local shops are second most preferred with 27.5% of respondents favouring them. 15% of them indicated that they prefer to buy at retail malls, 11% of the respondents prefer to buy online and only 2% prefer to buy at other areas like Rythu bazar because consumers carry their bags with them.

Table 7: Factors considered while buying agri based biodegradable products

S. No.	Factors considered	Respondents	Percentage
1.	Price	47	39.1
2.	Quality	62	51.6
3.	Re-usable	78	65.0
4.	Size and colour	18	15.8
5.	Appearance	27	22.5

* Multiple responses were collected

Consumers are increasingly concerned about reusable nature (65%) as the products are used multiple times, reducing waste and saving money. Products to be high quality (51%) as consumers are not willing to compromise on the performance and durability of products. The price of the products (40%) also remains a significant consideration. Appearance (22%), size and colour (15%) of the products are some of the factors considered by consumers.

Table 8: Reasons for choosing biodegradable products.

S. No.	Particulars	Mean
1.	Good for environment	4.3
2.	Easily distinguish from conventional products	3.3
3.	Protects the products from moisture	2.8
4.	Reasonable price	3.4
5.	Well promoted	2.6
6.	available in the supermarket	3.1

It is indicated that reasons for choosing biodegradable products are categorized under different particulars. Among them good for environment attains the maximum level of consumer perception with the mean score of 4.3 and well promotion of biodegradable products attains the minimum level of consumer perception with mean score of 2.60.

Table 9: Overall consumer perception towards biodegradable products

S. No.	Category	Criteria score	Frequency(f)	Percent (%)
1.	Low	<16.30	25	20.83
2.	Medium	16.30-34.90	77	64.16
3.	High	>34.90	18	15.00

The results showed that 64.16 per cent of consumers had a medium perception of biodegradable products and 15.00 per cent had a high perception, 20.83 per cent of consumers had low perception. The above results depict that consumer has a medium perception towards biodegradable products because they are neutral for factors like the availability of products in supermarkets with a reasonable price, and biodegradable products that distinguish from conventional products, protecting the products from moisture. Consumers have low perception toward some factors because they are not available very much like single-use plastics and also less focus on promotional activities of biodegradable products, followed by Consumers show high perception towards biodegradable products because the products are less harmful to the environment and the quality of products is good.

Conclusions

The ban on single-use plastics (SUPs) by the central government has played a major role in boosting the demand for biodegradable products, aligning with global efforts to reduce plastic pollution and promote sustainability. The consumers are well aware of biodegradable products but these are not available at a reasonable price and the non-availability of products in the retail shops or malls was the major reason for non-customers to buy them. The price sensitivity for the agri based biodegradable products indicates that the demand for biodegradable products is quite elastic, which means the price change will occur only when there is a change in the demand for the product. Overall, agri based biodegradable business units acted as a turning point for many producers to get high income.

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References

1. ICLEI, Plastic waste management in Hyderabad, India-from a linear to a circular economy; c2020. https://southasia.iclei.org/blog-plastic-waste-management-inhyderabad-india-from-a-linear-to-a-circular-economy
2. Kaeb H, Dammer L, *et al*. Market study on the consumption of biodegradable and compostable plastic products in Europe 2015 and 2020. Narocon Innovation consulting; c2020.
3. Shams M, Alam I, Mahbub MS, *et al*. Plastic pollution during COVID-19: Plastic waste directives and its long-term impact on the environment. Environmental advances; c2021. p. 5.
4. Shaikh S, Yaqoob M, Aggarwal P, *et al*. An overview of biodegradable packaging in food industry. Current Research in Food Science. 2021;4:503-520.
5. Song JH, Murphy RJ, Narayan R, Davies GBH. Biodegradable and compostable alternatives to conventional plastics. Philosophical Transactions of the Royal Society B: Biological Sciences. 2009;364(1526):2127-2139.
6. Markets and Markets, Biodegradable Plastic Market global forecast to; c2028. https://www.marketsandmarkets.com/Market-Reports/biodegradable-plastics93.html July 2022
7. Grand view Research. Biodegradable Plastic Market Size, Share and trend analysis. https://www.grandviewresearch.com/industry-analysis/biodegradable-plasticsmarket 2020.
8. Vu Anh Dzung. Building a Survey Tool to Assess Consumers Perception and Behavior towards Green Consumption. VNU Journal of Economics and Business. 2013;29(2):142-150.