

## FROM WRITING TO GROWING: A MARKETING STUDY ON PLANTABLE STATIONERY AS A SUSTAINABLE PRODUCT

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### Abstract:

*This study examines the marketing potential of plantable stationery as a sustainable alternative to conventional stationery products. With rising environmental concerns and increasing demand for eco- friendly solutions, plantable stationery offers an innovative product that combines functionality with environmental regeneration. A descriptive research design was adopted, and primary data were collected from 252 respondents using a structured questionnaire. Reliability was confirmed through Cronbach's alpha, and hypotheses were tested using Pearson correlation and Welch's ANOVA. The findings reveal a significant positive relationship between consumer awareness and purchase intention, as well as between environmental concern and consumer preference. Marketing strategies were also found to significantly influence buying behaviour. The study concludes that strategic green marketing and awareness initiatives can enhance market acceptance and promote sustainable consumption. However, the study is limited by its relatively small sample size and restricted geographic coverage, which may affect the generalizability of the findings.*

**Keywords** : *Sustainable product, Marketing strategies, Consumer behavior, Environmental awareness, Plantable stationery, Sustainable startups.*

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### Introduction:

In an age where climate change headlines dominate global discussions, sustainability has become a critical concern in contemporary economic and environmental discussion. Consumers today are not just buying products; they are buying values, responsibility, and impact. As environmental concerns such as deforestation, plastic waste, and resource depletion intensify, the demand for innovative eco-friendly alternatives is rapidly growing. One such creative breakthrough is plantable stationery—an idea that transforms a simple writing tool into a symbol of regeneration and environmental hope.

Plantable stationery, made with seeds embedded in it, redefines the lifecycle of everyday products. Instead of ending up in landfills, used pencils, pens, or notebooks can be planted to grow into herbs, flowers, or vegetables. This unique blend of functionality and sustainability appeals strongly to environmentally conscious consumers,

educational institutions, and organizations aiming to promote green living. It turns the act of writing into an act of growing, creating both emotional and environmental value.

Despite its strong symbolic appeal and market potential, plantable stationery remains underexplored in mainstream markets due to limited awareness and pricing perceptions. Strategic marketing, storytelling, and consumer education play a crucial role in shaping acceptance and purchase intentions. Therefore, understanding consumer perceptions and effective marketing approaches is essential to position plantable stationery as not just a product, but a movement toward sustainable consumption.

#### **Statement of Problem:**

Environmental degradation has increased due to the growing use of plastic and non-biodegradable materials, including conventional stationery products that contribute to waste and pollution. As sustainability becomes more important, eco-friendly alternatives such as plantable stationery have emerged, offering the possibility of reducing waste while supporting environmental conservation. However, plantable stationery is still a relatively new concept, and its success in the market largely depends on consumer acceptance and effective marketing strategies. Existing studies mainly emphasize environmental benefits, while limited attention has been given to its marketing potential and consumer behaviour. In particular, there is a lack of understanding of how consumer awareness, environmental concern, and green marketing strategies influence purchase intentions. Therefore, this study seeks to examine these factors and evaluate the marketing potential of plantable stationery as a sustainable alternative.

#### **Significance of the Study:**

The study on plantable stationery is important because it promotes eco-friendly alternatives to traditional stationery that help reduce environmental waste. It helps understand consumers' buying behaviour and awareness regarding sustainable products. The research also identifies effective marketing strategies that encourage people to adopt plantable stationery. Additionally, the study supports businesses, educational institutions, and policymakers in promoting environmentally responsible products and sustainable practices.

#### **Limitations of the Study:**

The study is limited by the use of convenience sampling and a respondent group largely consisting of students. Therefore, the findings may not fully represent the behavior of the broader consumer population.

#### **Objectives of the Study:**

1. To evaluate consumer awareness of plantable stationery products.
2. To investigate the influence of environmental concern on consumer preference for plantable stationery.
3. To analyze the impact of green marketing strategies on consumer buying behavior towards plantable stationery.

#### **Research Hypothesis:**

##### **Hypothesis 1:**

1. H<sub>0</sub>: There is no significant relationship between consumer awareness of plantable stationery and their purchase intention.

2. H1: There is a significant relationship between consumer awareness of plantable stationery and their purchase intention.

**Hypothesis 2:**

1. H0: Environmental concern does not significantly influence consumer preference towards plantable stationery.
2. H1: Environmental concern significantly influences consumer preference towards plantable stationery.

**Hypothesis 3:**

1. H0: Marketing strategies do not have a significant difference on customers' buying behaviour towards plant-based stationery products.
2. H1: Marketing strategies have a significant difference on customers' buying behaviour towards plant-based stationery products.

**Literature Review:**

**1. Sharma, S. N., & Subba, R. (2025).**

According to Sharma and Subba (2025), green companies are crucial for fostering sustainability and economic expansion. In addition to making money, these environmentally conscious companies work to lessen pollution, save resources, and promote sensible consumption. They reduce waste and promote a low-carbon economy by implementing cutting-edge technologies and circular economy principles like recycling and reuse. The study comes to the conclusion that green entrepreneurship demonstrates how economic growth and environmental preservation may coexist.

**2. Devi Juwaheer, T., Pudaruth, S., & Monique Emmanuelle Noyaux, M. (2012)**

This study of the literature looks at how green marketing tactics affect Mauritius consumers' purchase decisions. It concludes that encouraging eco-friendly characteristics, such as recyclable packaging and sustainable branding, increases consumer preference and fosters loyalty and confidence. However, purchasing decisions are also influenced by elements including cost, quality, and awareness. In general, green marketing encourages sustainable consumption; but, for long-term effects, affordability and accessibility must be matched.

**3. Lily, L., Lee, K. Y. M., Yi, S., & Ling, P. S. (2025).**

Environmental concern is a significant moderating factor in Lily, Lee, Yi, and Ling's (2025) research on university students' intentions to purchase eco-friendly stationery. They discover that while high costs, restricted availability, and low awareness decrease actual purchasing, favorable attitudes, perceived value, and social impact enhance purchase intention. Students who care deeply about the environment are more likely to make actual purchases based on their favorable sentiments.

**4. Christopher, D. S., Priya, B. M., & Priyadharshini, M. S. (2023)**

According to the literature analysis, consumers' opinions of green products—which are frequently regarded as safe, healthy, and ecologically friendly—have improved as a result of growing environmental consciousness. However, actual purchases may be restricted by elements such as exorbitant costs, ignorance,

and doubt regarding product promises. The study comes to the conclusion that the main factors influencing the uptake of green products are affordability, appropriate consumer education, and faith in the genuineness of the product.

**5. De Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2014)**

Key elements of successful ecologically sustainable product innovation are identified by the authors' systematic review. Collaboration both inside and beyond the company, a strong commitment from management, and the incorporation of sustainability into corporate strategy are all necessary for success. While high prices, technological limitations, and unsure market acceptability serve as impediments to innovation, consumer demand, restrictions, and competition also drive it. In general, sustainable product creation requires fostering an innovative culture and coordinating environmental objectives with business strategy.

**6. Shaktawat, Pallavi. (2023)**

According to the article, plantable pencils created from recycled paper contribute to the reduction of plastic pollution, paper waste, and deforestation. They have seed capsules that may be planted after use, converting waste into plants, in contrast to conventional pencils. Indian entrepreneurs' efforts and the straightforward production procedure demonstrate their potential for both revenue generating and environmental preservation. All things considered, plantable pencils encourage recycling, sustainability, and environmental consciousness.

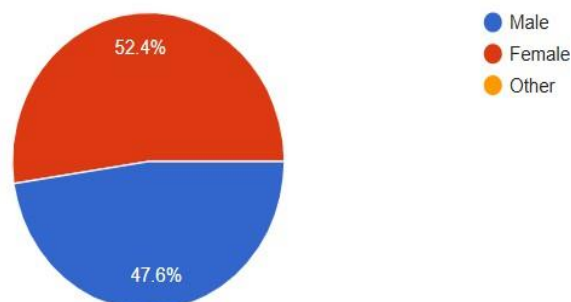
**Research Methodology:**

Sr.No.	Methods	Parameters
1	Research Design	Descriptive
2	Sources of Data Collection	Primary Sources & Secondary Sources
3	Data collection Tool	Survey Based Structured (Questionnaires)
4	Data Analysis Tool	Jamovi (Version 2.3)
5	Sample Size	252
6	Sampling Method	Non-probability method using convenience sample
7	Reliability of data	Cronbach Alpha

### DATA ANALYSIS AND INTERPRETATION

#### Gender

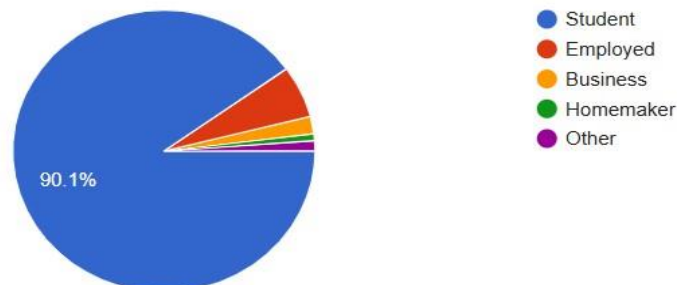
252 responses



With 52.4% of respondents being female and 47.6% being male, the gender distribution is about balanced, as the chart shows, with slightly more female involvement.

#### Occupation

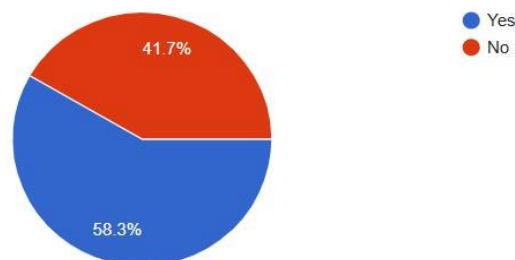
252 responses



According to the figure, 90.1% of survey respondents are students, with the remaining respondents coming from a variety of professions. This suggests that the results primarily reflect the preferences of students.

#### Have you heard about plantable stationery products before?

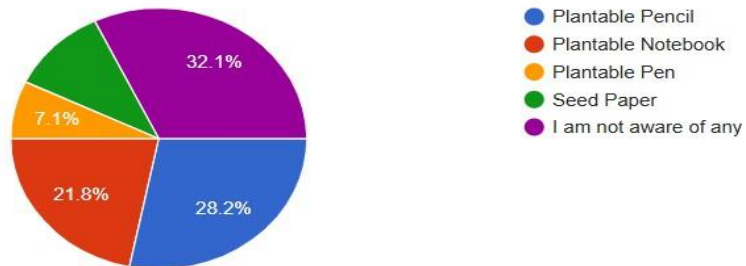
252 responses



According to the graph, 41.7% of respondents had never heard of plantable stationery products, compared to 58.3% who had. This suggests a moderate level of awareness, yet a sizable section of the intended audience is still not familiar with the idea.

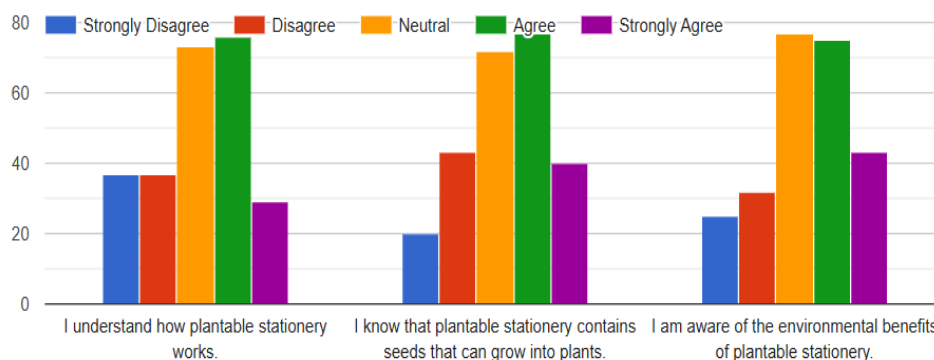
Which of the following plantable products are you aware of?

252 responses



Plantable products are unknown to 32.1% of respondents, according to the chart. The most well-known items among those who are aware are plantable pencils (28.2%), notebooks (21.8%), seed paper (10.8%), and pens (7.1%).

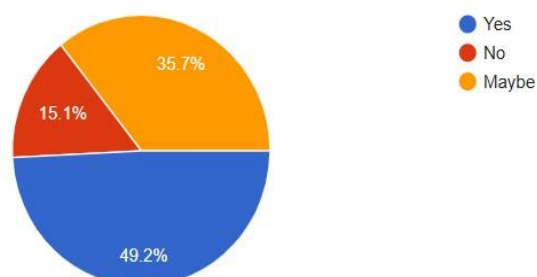
**Consumer Awareness**



The graph indicates that most respondents have a positive awareness of plantable stationery and its advantages; nevertheless, some respondents are still unclear, suggesting that further education is necessary

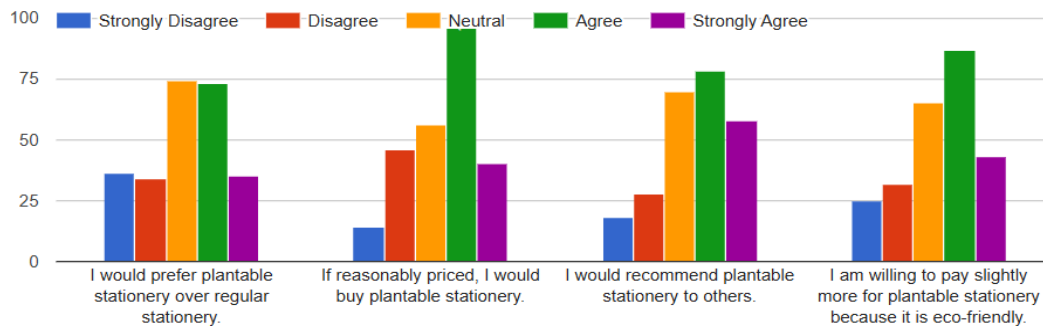
Would you be willing to buy plantable stationery in future?

252 responses



With 49.2% wanting to buy, 35.7% contemplating, and only 15.1% reluctant to buy, the chart demonstrates a strong purchase intention for plantable stationery, suggesting good market potential.

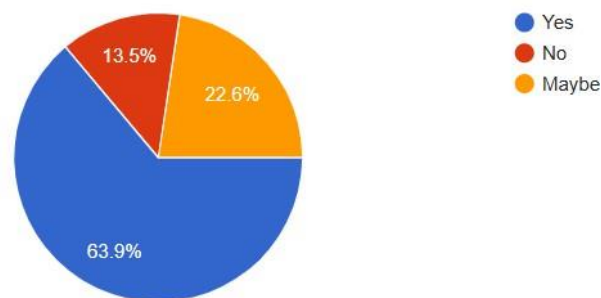
**Purchase Intention**



Despite some lukewarm replies, the chart indicates substantial market potential and largely positive buy intention, particularly for recommendations and moderately priced products.

**Would environmental benefits motivate you to try plantable stationery?**

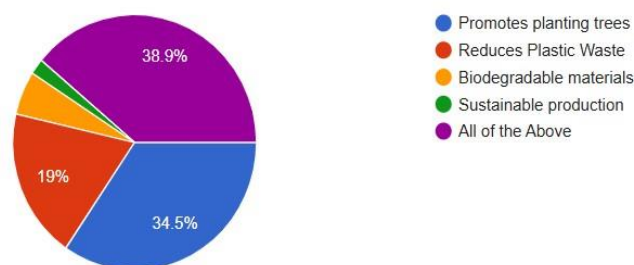
252 responses



According to the chart, consumers are highly motivated by environmental benefits, with sustainability being a major factor and 63.9% of them wanting to try plantable stationery.

**Which environmental benefit of plantable stationery attracts you most?**

252 responses



The chart shows that the most attractive environmental benefit is All of the Above 38.9%, indicating consumers value multiple sustainability aspects together. Promoting tree planting 34.5% and reducing plastic waste 19% are also significant motivators. Biodegradable materials and sustainable production attract comparatively fewer respondents individually.

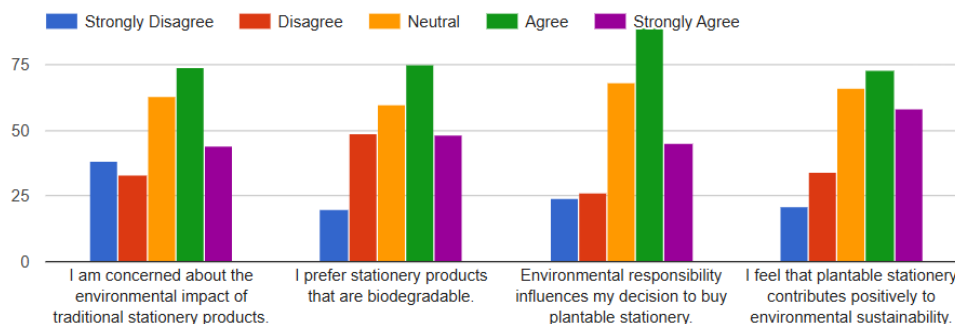
If plantable stationery costs slightly more than regular stationery, what would you do?

252 responses



The chart indicates that 46.8% of respondents say their decision would depend on quality if plantable stationery costs more. Meanwhile, 31.7% would still buy plantable stationery, while 21.4% would choose regular stationery. This suggests quality is a key factor in justifying a higher price.

Environmental Awareness



The chart shows strong environmental awareness, with most respondents selecting Agree or Strongly Agree across all statements. Many express concern about traditional stationery’s impact and prefer biodegradable products. Environmental responsibility clearly influences buying decisions and perceptions of plantable stationery’s positive contribution.

Which marketing strategy would attract you the most?

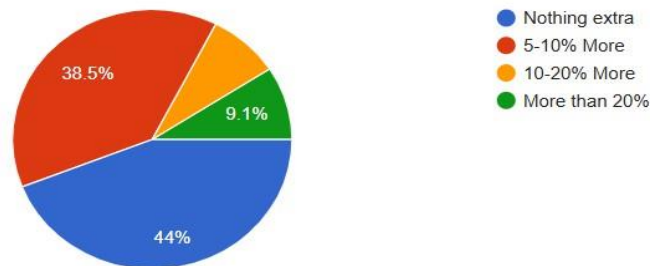
252 responses



The most popular marketing approach, according to the pie chart, is social media contests (34.1%), followed by discounts (21%) and environmentally friendly packaging (16.7%). Influencer marketing and demo videos are less successful than cashback (11.9%) and school promotions (11.1%).

How much extra are you willing to pay for plantable stationery?

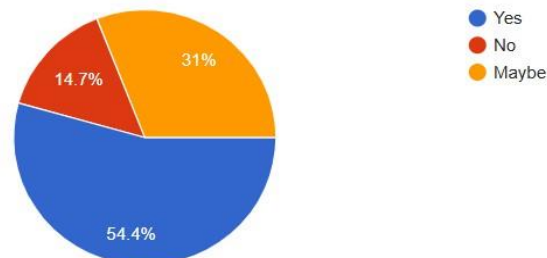
252 responses



A desire for eco-friendly products at little additional cost is indicated by the chart, which demonstrates considerable price sensitivity for plantable stationery, with 44% unwilling to pay more, 38.5% accepting a 5–10% premium, and few prepared to pay more.

If you could resale the grown plant back to the company and earn money, would it influence your purchasing decision?

252 responses



The chart indicates that **54.4%** of respondents would be influenced to purchase if they could resell the grown plant and earn money.

About **31%** are uncertain, while only **14.7%** said it would not affect their decision. This suggests that a resale incentive could significantly boost purchasing interest.

### Reliability Analysis

Scale Reliability Statistics		Item Reliability Statistics	
	Cronbach's $\alpha$	Item-rest correlation	If item dropped Cronbach's $\alpha$
scale	0.884	Aw1	0.780
		Aw2	0.792
		Aw3	0.752

### Reliability Analysis

Scale Reliability Statistics	
<b>Cronbach's <math>\alpha</math></b>	
scale	0.924

Item Reliability Statistics

	Item-rest correlation	If item dropped
		<b>Cronbach's <math>\alpha</math></b>
Ea1	0.842	0.895
Ea2	0.806	0.907
Ea3	0.851	0.892
Ea4	0.797	0.910

### Reliability Analysis

Scale Reliability Statistics	
<b>Cronbach's <math>\alpha</math></b>	
scale	0.897

Item Reliability Statistics

	Item-rest correlation	If item dropped
		<b>Cronbach's <math>\alpha</math></b>
Pi1	0.817	0.851
Pi2	0.808	0.853
Pi3	0.727	0.882
Pi4	0.736	0.881

The internal consistency of the study constructs was assessed using Cronbach's alpha. Consumer Awareness (Aw1–Aw3) had  $\alpha = 0.884$ , Purchase Intention (Pi1–Pi4) had  $\alpha = 0.897$ , and Environmental Attitude (Ea1– Ea4) had  $\alpha = 0.924$ . All item-rest correlations and alpha-if-item-deleted values indicate that the scales have good to excellent reliability, making the data highly consistent and suitable for further analysis.

#### Results

##### Correlation Matrix

Correlation Matrix		Awareness mean	purchase intention mean
Awareness mean	Pearson's r	—	—
	df	—	—
	p-value	—	—
purchase intention mean	Pearson's r	0.739 ***	—
	df	250	—
	p-value	< .001	—

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

The Pearson correlation analysis revealed a strong positive relationship between consumer awareness and purchase intention ( $r = 0.739$ ,  $p < 0.001$ ). Since the p-value is less than 0.05, the null hypothesis is rejected. Therefore, it can be concluded that consumer awareness significantly influences purchase intention toward plantable stationery.

Correlation Matrix

Correlation Matrix		consumer preference mean	Environmental Concern mean
consumer preference mean	Pearson's r	—	—
	df	—	—
	p-value	—	—
Environmental Concern mean	Pearson's r	0.859	—
	df	251	—
	p-value	< .001	—

The Pearson correlation analysis revealed a very strong positive relationship between environmental concern and consumer preference ( $r = 0.859$ ,  $p < 0.001$ ). Since the p-value is less than 0.05, the null hypothesis is rejected.

Therefore, environmental concern is significantly associated with consumer preference toward plantable stationery.

### One-Way ANOVA

One-Way ANOVA (Welch's)

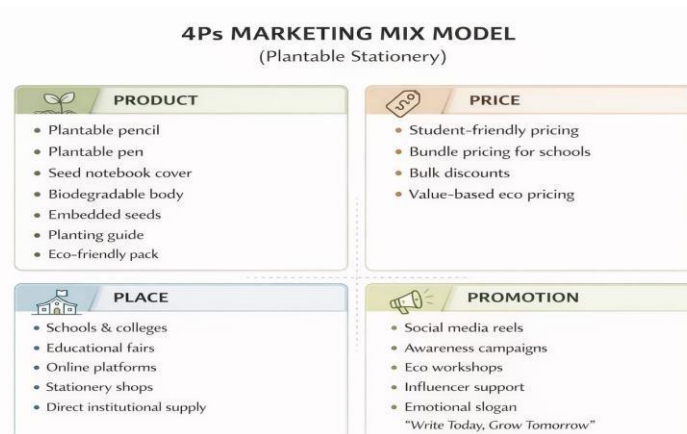
	F	df1	df2	p
purchase intention mean	2.76	4	93.2	0.032

Welch's ANOVA indicated a statistically significant difference in purchase intention among different marketing strategies,  $F(4, 93.2) = 2.76, p = 0.032$ . Since the p-value is less than 0.05, the null hypothesis was rejected. Therefore, marketing strategies significantly influence customers' buying behaviour toward plant-based stationery products.

### Marketing Models and Strategies:

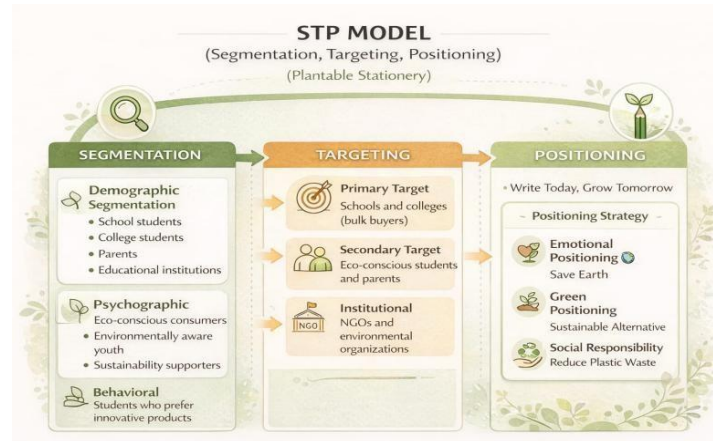
#### 1.4Ps Model (Product, Price, Place, Promotion)

The 4Ps model focuses on the core elements of marketing strategy. The product includes plantable stationery made from recycled materials with embedded seeds. The pricing strategy aims to keep the product affordable for students. The place strategy involves distribution through schools, colleges, and online platforms. Promotion includes social media campaigns, campus ambassador programs, contests, and sustainability awareness initiatives.



#### 2. STP Model (Segmentation, Targeting, Positioning)

The STP model helps in identifying and reaching the most suitable customer group. In this study, the market is segmented based on demographic (students and youth), psychographic (environmentally conscious consumers), and behavioral factors (sustainability-driven buying behavior). The primary target market includes school and college students. The product is positioned as an eco-friendly and innovative alternative that combines writing with environmental impact.



### 3. Instagram “Grow, Tag & Win” Contest

As part of the promotional strategy, an official Instagram page can be created to build awareness and engagement for plantable stationery. Customers who purchase the product will be encouraged to grow the plant and post a picture of the grown plant on Instagram. Participants must tag the official page and use a specific campaign hashtag so that the product usage can be tracked and promoted.

The posts receiving the highest number of likes within a fixed time period can be rewarded with eco-friendly gift hampers or discount vouchers. This strategy increases brand visibility, encourages user-generated content, and creates a community around sustainability. It also builds trust, as real customers showcase real results.

### 4. “Grow & Earn” Resale Cashback Model

Another innovative idea is to introduce a resale-based cashback system. Customers can grow the plant from the plantable stationery and later resell the fully grown plant back at a fixed value. In the case of vegetable or flowering plants, these can then be resold through local markets or eco-friendly platforms.

This strategy adds financial value to environmental action. It motivates consumers not only to buy but also to actively participate in sustainable practices. Such a model promotes both environmental responsibility and small-scale income generation.



### 5. *Campus Green Ambassador Initiative*

A Campus Green Ambassador Program can be introduced in schools and colleges to promote plantable stationery through peer influence. Selected students will act as ambassadors to organize plantation drives, awareness sessions, and social media promotions within their institutions. They can also encourage participation in Instagram contests and sustainability activities. Incentives such as certificates, recognition, and eco-friendly rewards can be provided to motivate participation. This strategy helps build a sustainability-focused student community and increases product visibility in the primary target market.

### 6. *QR Code-Based Digital Engagement Strategy*

To combine technology with sustainability, a QR code can be printed on product packaging. When scanned, it will direct customers to planting instructions, tutorial videos, and sustainability information. This enhances user experience, ensures proper plant growth guidance, and strengthens customer engagement. The QR code system also increases transparency and builds trust by providing educational support to consumers.

#### **Environmental Impact Projection:**

If 1,000 plantable stationery products are used and planted, approximately 1,000 plants can be grown, contributing to improved urban greenery and waste reduction. Compared to conventional stationery, plantable products reduce landfill waste and promote circular consumption. Over time, large-scale adoption can positively impact environmental sustainability and carbon reduction.

#### **Conclusion:**

This study concludes that plantable stationery holds strong potential as a sustainable alternative to conventional stationery products in today's environmentally conscious market. The findings indicate that consumer awareness and environmental concern significantly influence purchase intention and consumer preference. Students, who form the majority of respondents, demonstrate positive attitudes toward adopting eco-friendly products, particularly when environmental benefits such as waste reduction and tree planting are clearly communicated. Effective green marketing strategies, including social media engagement, campus initiatives, and innovative concepts like the "Grow & Earn" model, can further enhance customer involvement and encourage repeat purchase behaviour.

Plantable stationery represents not only a product innovation but also a meaningful step toward responsible consumption. The concept aligns with Sustainable Development Goal 12 (Responsible Consumption and Production) and Sustainable Development Goal 13 (Climate Action), contributing to broader global sustainability objectives. Although the study is limited to respondents from a specific region using convenience sampling, future research may expand across different geographical areas to better understand long-term sustainable consumer behaviour and large-scale adoption potential.

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