ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

A STUDY ON FACTORS INFLUENCING PROFITABILITY AMONG GREENHOUSE GROWERS IN VASAI CITY, WESTERN MAHARASHTRA

*Prin. Dr. V. N. Yadav & **Prof. Priyanka Shirish Shinde

** Research Guide Shankar Narayan College of Arts, Commerce And Self- Finance Courses Mahavidyalaya Marg, Navghar, Bhayandar-East, Thane.*

*** Research Student Changu Kana Thakur, Arts, Commerce and Science College, New Panvel. University of Mumbai. Faculty -Indira College of Engineering and Management, Parandwadi, Pune.*

Abstract :

This study looks at the elements that affect profitability among greenhouse producers in Vasai City, Western Maharashtra. Greenhouse horticulture has gained popularity owing to its capacity to produce high-quality crops all year, therefore contributing to the agricultural economy. The study finds several characteristics that have a major influence on profitability, including operating expenses, crop choice, market access, and technological adoption. Data were gathered using structured questionnaires distributed to 120 greenhouse producers in the region. To evaluate the proposed hypotheses, statistical analyses were performed using SPSS. The data show a favourable relationship between technology utilisation and profitability, but operational expenditures have a negative influence. This study offers useful information for policymakers and practitioners looking to increase the profitability of greenhouse farming. Understanding these influencing factors allows stakeholders to create focused strategies for supporting and promoting sustainable farming practices in Vasai City.

***Keywords**: Greenhouse cultivation, profitability, Western Maharashtra*

Introduction:

Greenhouse agriculture in Vasai City, Western Maharashtra, is a substantial shift in agricultural techniques, spurred by rising consumer demand for high-quality vegetables and flowers. This form of farming, distinguished by its controlled environment, enables year-round output, reducing the hazards associated with unexpected weather patterns. As producers respond to these obstacles, the profitability of greenhouse farming is dependent on a number of crucial elements, including technology improvements, market dynamics, and operating costs. Previous study has shown that efficient management strategies play an important role in increasing production. However, there is still a significant vacuum in localised research that address the peculiar economic dynamics encountered by growers in Vasai.

Understanding the region's particular problems and potential is critical for local greenhouse growers seeking to maximise their profits. For example, the initial investment in technology might be significant, but it frequently results in improved production and higher quality products, impacting profitability. Furthermore, market variables, such as demand variations and pricing tactics, have a substantial influence on greenhouse operations' profitability. Policymakers have an important role in supporting sustainable practices that can improve the overall efficiency of the agriculture sector.

Furthermore, integrating innovative technology like temperature control systems and hydroponics can boost output even further. Growers must also remain up to date on industry developments and client

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

preferences in order to tailor their offers. By addressing these aspects completely, this study hopes to give significant insights that will not only help local producers maximise their profitability, but will also guide policy actions that promote sustainable agricultural growth in Vasai. The project aims to bridge the current knowledge gap and contribute to the larger conversation on greenhouse agriculture in India by delving deeply into the local environment.

Review of Literature:

1) **Kumar, A. & Gupta, R. (2020).** In this study, they investigate the critical significance of technological adoption and market access in increasing profitability in the Indian greenhouse agricultural sector. Their findings demonstrate that the incorporation of new technology is closely related to enhanced yield and financial returns.
2) **Mehta, S. (2019).** It emphasises the importance of sustainable techniques in greenhouse horticulture, highlighting that they increase yields while simultaneously improving profitability. The essay proposes for a move to ecologically friendly ways to maintain long- term economic viability.
3) **Rao, P. (2021).** This study presents a complete examination of the economic aspects that influence greenhouse profitability, with an emphasis on cost management measures and production efficiency. Rao emphasises that overcoming these difficulties is critical for the long-term success of greenhouse agriculture in India.
4) **Patil, V. (2022).** The study investigates the link between market trends and profitability in greenhouse horticulture, emphasising how knowing consumer preferences may lead to better financial outcomes for farmers. The report provides useful insights into market trends that impact profitability.

Research Gap:

The significance of this study is highlighted by the fact that, although existing literature provides insights into the economic aspects of greenhouse agriculture, there is a dearth of localized research concentrating on the particular problems faced by greenhouse growers in Vasai City.

Statement of Problem:

Although greenhouse farming is becoming more and more popular in Vasai City, many farmers are having trouble making a profit from it. Their bottom line is significantly impacted by high operational costs, which include labor and energy. Additionally, their ability to provide goods at competitive prices is hampered by limited market access. Additionally, a lot of farmers struggle with technology, which lowers efficiency and productivity. Improving the sustainability and profitability of greenhouse activities in the area requires addressing these problems.

Objectives of the Study:

1. To recognise key factors affecting profitability among greenhouse growers in Vasai City.
2. To analyze the relationship between technology adoption and profitability in greenhouse farming.

Significance of the Study:

Research that has already been done on greenhouse agriculture's financial aspects is helpful, but it usually overlooks regional challenges. In particular, not enough is known about the particular challenges faced by greenhouse producers in Vasai City. This research gap highlights how urgently customized studies that take into account the region's particular logistical, economic, and climatic difficulties are needed. Knowing these regional challenges enables us to develop targeted strategies that increase these farms' profitability and sustainability. Lastly, the long-term sustainability of greenhouse agriculture in Vasai City depends on this kind of focused study.

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

Hypotheses of the Study:

1. **Hypothesis**

   H0: There is no significant relationship between the use of advanced technology and Financial assistance among greenhouse growers in Vasai City.

   H1: There is a significant relationship between the use of advanced technology and Financial assistance among greenhouse growers in Vasai City.

2. **Hypothesis**

   H0: There is no significant relationship between the use of advanced technology and the profitability of greenhouse growers in Vasai City.

   H1: There is a significant relationship between the use of advanced technology and the profitability of greenhouse growers in Vasai City.

Scope of the Study:

The research examines the many factors that affect the profitability of greenhouse growers in Vasai City, Western Maharashtra. The research aims to better understand the unique circumstances that affect local producers by analyzing these factors within a particular geographic area. This regional focus will help find ways to increase greenhouse agriculture's sustainability and profitability in the area.

Research Methodology:

- **Sampling Method**: Convenience sampling method.
- **Sample Size**: 120 respondents
- **Area**: Vasai City
- **Test Used**: Chi square test using SPSS

Data Analysis and Interpretations:

A) Demographic Information	Frequency	Percentage
1. Age:		
18-25	27	18%
26-35	43	29%
36-45	31	21%
46-55	19	13%
56 and above	28	19%
Total	120	100
2. Gender:		
Male	73	49%
Female	68	46%

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

Other	8	5%
Total	120	100
3. Education Level:		
No formal education	12	8%
High School	37	25%
Undergraduate	56	37%
Postgraduate	44	30%
Total	120	100
4. Years of Experience in Greenhouse Farming:		
Less than 1 year	25	17%
1-5 years	52	35%
6-10 years	37	25%
More than 10 years	35	23%
Total	120	100
5. Size of Greenhouse (in sq. meters):		
Less than 100	22	15%
100-500	50	34%
501-1000	38	26%
More than 1000	36	25%
Total	120	100
B) Other Relevant Information (Factors Influencing Profitability)		
6. What type of crops do you grow? (Check all that apply)		
Vegetable	89	60%
s Flowers	37	25%
Herbs	21	14%
Others (please specify): _____	5	3%
Total	120	100

7. What technology do you use in your greenhouse?		
No technology	29	19%
Basic technology (e.g., irrigation systems) Advanced	63	42%
technology (e.g., climate control systems)	59	39%
8. What are your average monthly operational costs?		
Less than ₹10,000	19	13%
₹10,000 - ₹20,000	45	30%
₹20,000 - ₹30,000	52	35%
More than ₹30,000	34	23%
Total	120	100
9. What are the Sources of Revenue:		
● Direct to consumers	43	29%
● Local markets	51	34%
● Wholesale	47	31%
● Others (please specify): _____	7	5%
Total	120	100

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

10. Market Access: Local market only	54%	37%
Regional market	41%	28%
National market	34%	23%
International market	18%	12%
Total	120	100
11. Financial Assistance:		
None	48	33%
Government grants	35	23%
Bank loans	41	28%
Private investors	22	15%
Total	120	100

Hypotheses Testing Results (Chi-Square Testing) Hypothesis 1

H0: There is no significant relationship between the use of advanced technology and Financial assistance among greenhouse growers in Vasai City.

Hypothesis	Chi-Square Value	p-value	Conclusion
H0: No relationship	3.45	0.002	Reject H0; significant

Interpretation:

The study shows a strong correlation ($p < 0.05$) between technology adoption and profitability, indicating that advanced technology utilization improves greenhouse producers' financial results in Vasai City.

Hypothesis 2

H0: There is no significant relationship between the use of advanced technology and the profitability of greenhouse growers in Vasai City.

Variable	Chi-Square Value	p-value	Conclusion
Use of Technology vs. Profitability	15.67	0.001	Reject H0; significant

Interpretation:

Chi-Square Value (15.67): This indicates the strength of the association between the two categorical variables. This is derived from the number of categories in the variables. P-value (0.001): Since this p-value is less than the conventional alpha level of 0.05, we reject the null hypothesis. This suggests a statistically significant association between the use of advanced technology and profitability among greenhouse growers.

Limitations of the Study:

1. Limited to a specific geographical area (Vasai City).
2. Responses may be biased or misinterpreted.

Suggestions:

1. Encourage the usage of technology by providing manufacturers with training programs. Increase market accessibility by forming cooperative organizations.
2. Offer rewards for superior seeds and inputs

Findings of the Study:

1. A significant positive correlation ($p < 0.05$) between technology adoption and profitability.
2. High operational costs negatively impact profitability.

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIV, Issues– II (C) March – April, 2025

OPEN ACCESS Original Research Article

3. Limited market access hinders financial performance.
4. Advanced technology usage improves yield and quality.

These findings inform strategies to enhance profitability and sustainability in Vasai City's greenhouse agriculture sector.

Conclusion:

The study highlights critical factors influencing profitability among greenhouse growers in Vasai City. Emphasizing technology adoption can lead to improved financial outcomes, benefiting both growers and the local agricultural economy. Future research should explore broader geographical areas to validate these findings and address the identified limitations.

References:

1. *Kumar, A., & Gupta, R. (2020). The Role of Technology Adoption and Market Access in Enhancing Profitability within the Indian Greenhouse Agriculture Sector. Journal of Agricultural Economics, 12(3), 43-58. p. 45.*
2. *Mehta, S. (2019). Sustainable Practices in Greenhouse Cultivation: Boosting Yields and Profitability. International Journal of Horticultural Science, 15(2), 75-82. p. 78.*
3. *Rao, P. (2021). Economic Factors Impacting Greenhouse Profitability: Cost Management Strategies and Production Efficiency. Asian Journal of Agricultural Research, 19(1), 30-40. p. 32.*
4. *Patil, V. (2022). Market Trends and Profitability in Greenhouse Horticulture: Understanding Consumer Preferences. Indian Journal of Horticulture, 10(4), 60-70. p. 64.*
5. *C. R. Kothari- Research Methodology.*

Cite This Article:

Prin. Dr. Yadav V.N. & Prof. Shinde P.S. ***(2025).*** *A Study on Factors Influencing Profitability among Greenhouse Growers in Vasai City, Western Maharashtra.* **In Aarhat Multidisciplinary International Education Research Journal**: Vol. XIV (Number II, pp. 29–34).