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R Glory

PG Scholar, Department of
Agricultural Economics,
Naini Agricultural Institute,
Sam Higginbottom University
of Agriculture, Technology &
Sciences, Prayagraj, Uttar
Pradesh, India

Dr. Victoria A Masih

Professor, Department of
Agricultural Economics,
Naini Agricultural Institute,
Sam Higginbottom University
of Agriculture, Technology &
Sciences, Prayagraj, Uttar
Pradesh, India

Corresponding Author:

R Glory

PG Scholar, Department of
Agricultural Economics,
Naini Agricultural Institute,
Sam Higginbottom University
of Agriculture, Technology &
Sciences, Prayagraj, Uttar
Pradesh, India

Economic viability of chilli as a small-scale business in Guntur district for export & domestic market

R Glory and Victoria A Masih

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Abstract

The study entitled "Economic Viability of Chilli as Small-Scale Business in Guntur District for Export & Domestic Market" was conducted to evaluate the profitability, market potential, and challenges in chilli cultivation and trade. The research highlights the contribution of chilli farming to job creation, rural income improvement, and equitable wealth distribution, and suggests solutions to overcome farmer limitations. Data were collected from 100 farmers across various villages in the Guntur district. Findings indicate that chilli cultivation offers significant profit potential through both domestic and export channels. Key constraints include traditional farming methods, pest attacks, price instability, and lack of market access. Recommendations include promoting modern farming practices, facilitating direct market linkages, and enhancing farmer awareness of government schemes to improve overall farmer livelihood.

The study also emphasizes the importance of value addition through chilli processing units, which can significantly increase farmer profits. Government support, such as subsidies and training programs, plays a critical role in enhancing productivity and export readiness. Adoption of advanced technologies like drip irrigation and pest-resistant chilli varieties can further boost yields and quality. Additionally, improving infrastructure like cold storage and market facilities can reduce post-harvest losses, ensuring better price realization for farmers. Moreover, strengthening Farmer Producer Organizations (FPOs) and expanding e-NAM digital platforms can empower small-scale farmers to access better markets and fair pricing.

Keywords: Chilli cultivation, small-scale business, export market, domestic market, Guntur district, farmer livelihood

Introduction

Chilli is a vital crop in India, extensively used in food preparations across the country. Guntur district in Andhra Pradesh is globally recognized as the "Chilli Capital of India," renowned for producing premium varieties like Guntur Sannam and Teja, which are highly demanded in international markets.

Despite its potential, many small-scale farmers in Guntur struggle with fluctuating prices, pest issues, and a lack of storage facilities (Sule John Adanehi et al, 2022). There is immense scope to boost farmers' income by transitioning from raw chilli sales to value-added products such as chilli powder, flakes, and sauces. These businesses can significantly contribute to rural employment and economic development.

The study focuses on the economic viability of chilli as a small-scale business, analyzing cost structures, profit margins, market dynamics, and the socio-economic impact on farmers in the Guntur district.

India ranks as the largest producer, consumer, and exporter of chilli globally, with Andhra Pradesh contributing approximately 30% to the country's total production (APEDA, 2024). The demand for Indian chillies in international markets is consistently high due to their pungency, vibrant color, and superior quality.

Furthermore, the adoption of Good Agricultural Practices (GAP) and increasing awareness among farmers about organic cultivation have improved the global competitiveness of Indian chillies. Encouraging farmers to diversify into processed chilli products can open new avenues in both domestic and international markets, leading to higher profitability and reduced post-harvest losses.

Research Methodology

The study was conducted in the Guntur district, Andhra Pradesh, using a multistage sampling technique. Villages such as Phirangipuram, Satuluru, Sattenapalle, Prattipadu, and Nekarikallu were purposively selected. A total of 100 farmers, categorized by farm size, were surveyed using structured questionnaires. Primary data were collected through personal interviews, and secondary data were sourced from relevant literature and official records.

1. Marketing Cost and Margin Analysis

This analysis was used to understand the costs incurred and profits earned by intermediaries in the marketing channels.

a) Price Spread

Price Spread = Price Paid by Consumer - Price Received by Producer

b) Marketing Margin

Margin = Selling Price - (Purchase Price + Marketing Cost)

2. Garrett's Ranking Technique

This method was used to identify and rank the major constraints faced by farmers in using and marketing fungicides.

Formula: Percent Position = $(100 \times (R_{ij} - 0.5)) / N_j$ Where:

- R_{ij} = Rank given for the i-th item by the j-th individual
- N_j = Number of items ranked by the j-th individual

Job Opportunities Across Different Education Levels

Table 1: Employment Opportunities by Education Level

S. No	Education Level	Farmers Trained	Jobs created (direct and Indirect)
1	Illiterate	80	110
2	Primary (1st-5th)	120	150
3	Secondary (6th-10th)	180	170
4	Higher Secondary & Above	120	90

Interpretation

Farmers with higher education levels were observed to have better job opportunities, especially in agribusiness and value-added activities. Illiterate and less-educated farmers mainly remained dependent on traditional farming practices with limited diversification. This indicates education significantly enhances employment scope beyond primary farming.

2. Methods to improve the economic standards for people in rural areas in chili- growing areas

3. Marketing Efficiency (Shepherd's Method)

This tool was used to measure the efficiency of different marketing channels. Formula: Marketing Efficiency (ME) = Value of Goods Sold / Total Marketing Cost

4. Standard Deviation

Standard deviation measures how much the values in a dataset deviate from the mean. It helps analyze variation among respondents. It is calculated using:

$$SD = \sqrt{[\Sigma (X - \mu)^2 / N]}$$

where X = individual value, μ = mean, and N = total number of observations.

Data were collected through structured schedules and interviews during the 2024 -2025 agricultural year.

Results and Discussion

- Age Distribution: 48% of farmers are in the 40 -50 years age group, 22% are below 40 years, and 11% are above 61 years.
- Gender: 89% of farmers are male, and 11% are female.
- Family Type: 55% of farmers have 3-5 family members, 33% have up to 2 members, and 12% have more than 5 members.
- Annual Income: 30% of farmers earn less than ₹2 lakh annually, 26% earn between ₹4- 6 lakh, and 27% earn more than ₹6 lakh.

The study found that farmers with higher education levels had greater access to better job opportunities and improved income standards. Among small farmers, 62.79% earned less than ₹2 lakh annually, whereas large farmers reported significantly higher earnings, with 36.36% earning more than ₹6 lakh per year. Education played a key role in increasing market access and profitability.

Small farmers primarily sold their produce through agents and local traders, while medium and large farmers marketed their produce through wholesalers and direct consumers, leading to better price realization.

Table 2: Distribution of Farmers by Education Level

Annual Income	Size of Farmer			Total
	Small Farmer	Medium Farmer	Large Farmer	
Less than Rs.2 Lakhs	27	3	0	30
	62.79%	6.52%	00.00%	30%
Rs.2 - 4 Lakhs	6	9	2	17
	13.95%	19.56%	18.19%	17%
Rs.4 - 6 Lakhs	3	18	5	26
	6.97%	39.13%	45.45%	26%
More than Rs.6 Lakhs	7	16	4	27
	16.27%	34.78%	36.36%	27%
Total	43	46	11	100
	100.00%	100.00%	100.00%	100.00%

Table 3: Distribution of Farmers by Annual Income

Annual Income	Small Farmer	Medium Farmer	Large Farmer	Total
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Less than Rs. 2 Lakhs	27 (62.79%)	3 (6.52%)	0 (00.00%)	30 (30%)
Rs. 2 - 4 Lakhs	6 (13.95%)	9 (19.56%)	2 (18.19%)	17 (17%)
Rs. 4 - 6 Lakhs	3 (6.97%)	18 (39.13%)	5 (45.45%)	26 (26%)
More than Rs. 6 Lakhs	7 (16.27%)	16 (34.78%)	4 (36.36%)	27 (27%)
Total	43 (100%)	46 (100%)	11 (100%)	100 (100%)

Interpretation

The data shows that education and farm size significantly impact farmers' economic status. Farmers with higher education levels and larger farms achieve better income levels and market access. Promoting education, providing market training, and encouraging large-scale farming or collective marketing can improve the overall economic standards of chilli farmers in rural areas.

3. Ensure equal distribution of wealth and income.

The study aimed to analyze the satisfaction levels of farmers regarding chilli cultivation and marketing to assess income

equality among different farm sizes. Farmers were categorized into small, medium, and large groups to evaluate their satisfaction levels.

Among small farmers, satisfaction was almost equally divided with 22% reporting low satisfaction and 21% reporting high satisfaction. For medium farmers, 26% reported low satisfaction and 20% reported high satisfaction. Large farmers showed a similar trend with 6% expressing low satisfaction and 5% expressing high satisfaction.

Overall, 54% of farmers had a low level of satisfaction, while 46% expressed high satisfaction in chilli cultivation and marketing.

Table 4: Distribution of Wealth and Income Across Farm Sizes

Size of Farmers	Level of Satisfaction	N	% of Total N
Small	Low	22	22%
	High	21	21%
	Total	43	43%
Medium	Low	26	26%
	High	20	20%
	Total	46	46%
Large	Low	6	6%
	High	5	5%
	Total	11	11%
Total	Low	54	54%
	High	46	46%
	Grand Total	100	100%

Interpretation

The analysis indicates that wealth and income distribution among chilli farmers is not entirely balanced. More than half of the farmers (54%) reported low satisfaction with income and marketing, which reflects income inequality, particularly among small and medium farmers. Large farmers are slightly better off but still show signs of dissatisfaction. This highlights the need for improved marketing support, better price realization, and more equitable access to farming resources to ensure fair distribution of wealth and income across all farm sizes.

4. The limitations & suitable suggestions for improvement in the livelihood of the farmers

The study found that chilli farmers in Guntur face several challenges, such as traditional farming practices, pest and disease attacks, water scarcity, poor market access, financial constraints, and price fluctuations. Most farmers struggle with low productivity due to outdated practices and limited awareness of modern agricultural techniques. Price fluctuations and dependency on middlemen were major concerns that affected their profitability. Additionally, the lack of proper storage facilities led to significant post-harvest losses, further reducing farmer income.

To improve the livelihood of chilli farmers, the study suggests promoting modern farming practices, improving irrigation infrastructure, forming Farmer Producer Organizations (FPOs), and providing better access to direct

markets. Increasing farmer awareness about government schemes, offering financial support, and providing technical training can collectively enhance the economic viability and sustainability of chilli farming in the region.

Interpretation

The major constraints faced by chilli farmers, including outdated farming methods, pest attacks, price fluctuations, and poor market access, directly limit their productivity and profitability. Addressing these challenges through modern practices, better infrastructure, direct market access, and awareness of government support can significantly improve the economic sustainability and overall livelihood of chilli farmers in Guntur.

Conclusion

The study on the economic viability of chilli as a small-scale business in Guntur district concludes that chilli cultivation has the potential to improve rural livelihoods, create employment, and support small-scale agribusinesses. Farmers with higher education levels and larger farms achieved better market access, job opportunities, and higher incomes. However, persistent challenges such as outdated farming practices, pest attacks, price instability, poor storage facilities, and dependency on middlemen continue to limit profitability.

Addressing these challenges through modern farming techniques, improved irrigation, direct marketing linkages,

and financial support can significantly uplift chilli farmers. Increasing awareness of government schemes, enhancing farmer training, and encouraging participation in Farmer Producer Organizations (FPOs) will further strengthen the sector. With focused interventions and supportive policies, chilli farming can contribute to sustainable economic growth and equitable income distribution in Guntur's rural communities.

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