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An economic analysis on marketing of green gram in Sitapur district of Uttar Pradesh

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Abstract

Moong pulse, commonly known as green gram, had been regarded as an important legume crop due to its rich nutritional composition, short crop duration, and ability to enhance soil fertility through nitrogen fixation. It had played a significant role in improving food and nutritional security by supplying plant-based protein and essential nutrients. However, its production and marketing had been constrained by factors such as pest infestation, diseases, and inefficient market structures. The present investigation entitled “An Economic Analysis on Marketing of Green Gram in Sitapur District of Uttar Pradesh” had been undertaken in Sitapur district, with Maholi block selected purposively. A sample of 120 farmers had been chosen through proportionate random sampling from selected villages. The study had identified two principal marketing channels, namely Channel-I (Producer → Consumer) and Channel-II (Producer → Wholesaler → Retailer → Consumer). In Channel-I, the producer sale price had been ₹ 6500 per quintal, with a marketing cost and price spread of ₹ 135, marketing efficiency of 47.14, and producer's share of 97.92%. In Channel-II, the producer sale price had been ₹ 6050, with total marketing cost of ₹ 390, marketing margin of ₹ 265, price spread of ₹ 655, marketing efficiency of 8.65, and producer's share of 89.62%. The findings had indicated that direct marketing channels were more efficient and advantageous for producers.

Keywords: Green gram, marketing channels, price spread, producer's share, marketing efficiency

Introduction

Green gram (*Vigna radiata* L.), commonly known as mung bean, had been recognised as an important pulse crop cultivated extensively in tropical and subtropical regions, particularly in South and Southeast Asia. It had been valued for its high nutritional content, as it contained significant levels of protein (Approximately 20-25%), essential amino acids, vitamins, and minerals, thereby contributing to dietary security and balanced nutrition. The crop had been characterised by its short duration, typically maturing within 60-70 days, which made it suitable for inclusion in multiple cropping systems and crop rotations. Agronomically, green gram had demonstrated the ability to improve soil fertility through biological nitrogen fixation, thereby reducing the dependency on synthetic fertilisers and enhancing sustainable agricultural practices. It had been cultivated under diverse agro-climatic conditions, ranging from irrigated to rainfed areas, although it performed optimally in well-drained loamy soils with moderate rainfall. Despite its advantages, the production of green gram had faced several constraints, including susceptibility to pests and diseases such as yellow mosaic virus, inadequate access to quality seeds, and limited adoption of improved cultivation practices. Nevertheless, advancements in varietal development, integrated pest management, and improved agronomic techniques had contributed to enhancing productivity and resilience. Furthermore, green gram had played a significant role in improving farmers' income due to its relatively low input requirements and market demand. In conclusion, green gram had been regarded as a vital pulse crop with substantial economic, nutritional, and ecological benefits, making it an integral component of sustainable agricultural systems.

Research Methodology

The selection of the district, blocks, villages, and respondents had been carried out using a combination of purposive and random sampling techniques. Sitapur district had been deliberately chosen to minimise logistical difficulties and time limitations faced by the investigator.

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Among all the blocks within the district, Maholi block had been selected purposively due to the higher concentration of farmers engaged in green gram cultivation. A comprehensive list of villages within the selected block had been prepared, from which five per cent of villages with a relatively large number of green gram growers had been chosen through random sampling. Subsequently, a list of all green gram cultivators in the selected villages had been compiled and categorised into five groups based on landholding size, namely marginal (below 1 hectare), small (1-2 hectares), semi-medium (2-4 hectares), medium (4-10 hectares), and large (above 10 hectares). From this frame, a total of 120 farmers had been selected using proportionate random sampling. In addition, 5 wholesalers, 5 distributors, and 10 retailers had been selected to analyse marketing costs, margins, price spread, producer's share in the consumer's rupee, and marketing efficiency in the study area. Primary data had been collected through a well-structured schedule using direct personal interviews, while secondary data had been obtained from books, journals, reports, and official records of district and block headquarters. The collected data had been analysed using appropriate statistical tools, and the findings pertained to the agricultural year 2024-2025.

Analytical Tools

Marketing Cost: $C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$

Market Margin: $AMI = P_{ri} - (P_{pi} + C_{mi})$

Price Spread: Marketing Cost + Market Margin

$$\text{Marketing Efficiency} = \frac{\text{Price received by producer}}{\text{Marketing Cost} + \text{Marketing Margin}}$$

Producer's Share in Consumer Rupee =

$$\frac{\text{Price received by the farmer}}{\text{Retail price paid by the consumer}} \times 100$$

Results and Discussion

Table 1: Marketing channel of green gram

Channel - I	Producer → Consumer
Channel - II	Producer → Wholesaler → Retailer → Consumer

Table 1: The table presented the marketing channels adopted for the distribution of green gram in the study area. It was observed that two primary channels had been identified. In Channel I, the produce had been sold directly by the producer to the consumer, indicating a shorter supply chain with minimal intermediaries, which potentially enhanced the producer's share in the consumer's rupee. In contrast, Channel II involved multiple intermediaries, including wholesalers and retailers, reflecting a more conventional and extended marketing system. This channel had facilitated wider market reach but likely increased marketing costs and reduced the producer's direct share in final consumer prices.

Channel 1: Farmer / Producer → Consumer

Table 2: Assessment of marketing cost, price spread, marketing efficiency, and producer's share in consumer expenditure of green gram in channel-I

Sl. No.	Particulars	Value (₹ /Quintal)
1	Producer sale price to Consumer	6500
	Cost incurred by Producer	
1	Packing cost	20.00
2	Packing material cost	20.00
3	Transportation cost	50.00
4	Loading and unloading charges	20.00
5	Weighing charges	5.00
6	Miscellaneous charges	20.00
7	Total marketing cost	135.00
8	Net price received by producer	6365
9	Producer's share in consumer's rupee (%)	97.92
10	Price spread	135.00
11	Consumer paid price	6500
12	Marketing efficiency	47.14

Table 2: The table presented the cost structure, price spread, and marketing efficiency of green gram under the direct marketing channel. It was observed that the producer sold the produce directly to consumers at ₹ 6500 per quintal. The total marketing cost incurred by the producer had been ₹ 135 per quintal, with transportation accounting for the highest share. The net price received by the producer had been ₹ 6365, representing 97.92% of the consumer's price.

The price spread had been minimal at ₹ 135, indicating reduced intermediary involvement. Furthermore, the marketing efficiency had been calculated at 47.14, reflecting a highly efficient marketing system with maximum benefit accruing to the producer.

Channel 2: Farmer / Producer → Wholesaler → Retailer → Consumer

Table 3: Assessment of marketing cost, price spread, marketing efficiency, and producer's share in consumer expenditure of green gram in channel-II

S. No.	Particulars	Value (₹ / Quintal)
1.	Producer's Phase	
1.1	Packing cost	20.00
1.2	Packing material cost	10.00
1.3	Transportation cost	50.00
1.4	Loading & unloading charges	20.00
1.5	Weighing charges	5.00
1.6	Miscellaneous charges	20.00
1.7	Total producer cost	125.00
1.8	Net price received by producer	5925.00
2.	Wholesale Phase	
2.1	Wholesaler purchase price (Producer sale price)	6050.00
2.2	Loading & unloading	20.00
2.3	Cleaning charges	10.00
2.4	Packaging charges	20.00
2.5	Commission	100.00
2.6	Miscellaneous & losses	20.00
2.7	Total wholesaler cost	170.00
2.8	Wholesaler margin	150.00
2.9	Sale price to retailers	6220.00
3.	Retail Phase	
3.1	Weighing charges	5.00
3.2	Loading & unloading	20.00
3.3	Transportation	50.00
3.4	Miscellaneous	20.00
3.5	Total retailer cost	95.00
3.6	Retailer margin	50.00
3.7	Sale price to consumer	6315.00
4.	Summary & Efficiency	
4.1	Price spread	655.00
4.2	Producer's share in consumer rupee (%)	89.62
4.3	Marketing efficiency	8.65

Table 3: The table illustrated the distribution of marketing costs, margins, price spread, and efficiency of green gram under Channel II, which involved intermediaries. It was observed that the producer sold the produce to wholesalers at ₹ 6050 per quintal and incurred a marketing cost of ₹ 125, resulting in a net receipt of ₹ 5925. The wholesaler bore a cost of ₹ 170 and retained a margin of ₹ 150, subsequently selling the produce to retailers at ₹ 6220. The retailer incurred ₹ 95 as marketing cost and earned a margin of ₹ 50 before selling to consumers at ₹ 6315 per quintal. The overall price spread had been ₹ 655, indicating higher intermediation costs compared to direct channels. The producer's share in the consumer's rupee had been 89.62%, which was relatively lower due to the involvement of intermediaries. The marketing efficiency had been calculated at 8.65, reflecting a less efficient system compared to direct marketing channels.

Table 4: Comparative evaluation of marketing cost, margins, price spread, producer's share in consumer expenditure, and marketing efficiency of green gram under channel-I and channel-II

S. No.	Particulars	Channel I	Channel II	Sample Average
1	Total marketing cost (₹ /qtl)	135	390	197
2	Total marketing margin (₹ /qtl)	0	265	208
3	Price spread (₹ /qtl)	155	655	428
4	Producer's share in consumer rupee (%)	97.92	89.62	78.46
5	Marketing efficiency	47.14	8.65	20.90

Table 4: The table presented a comparative assessment of key marketing indicators of green gram across Channel I and Channel II. It was observed that Channel I had recorded a significantly lower marketing cost of ₹ 135 per quintal, whereas Channel II had incurred a much higher cost of ₹ 390 due to the involvement of intermediaries. Similarly, no marketing margin had been observed in Channel I, while Channel II had exhibited a margin of ₹ 265. The price spread had been considerably lower in Channel I compared to Channel II, indicating a more efficient system. The producer's share in the consumer's rupee had been highest in Channel I at 97.92%, whereas it had declined in Channel II. Furthermore, marketing efficiency had been substantially higher in Channel I (47.14) than in Channel II (8.65). Overall, Channel I had demonstrated superior efficiency and greater benefits to producers compared to Channel II.

Conclusion

The overall analysis of marketing channels for green gram revealed significant variations in cost structure, margins, price spread, producer's share, and marketing efficiency. It had been observed that Channel I, which involved direct sale from producer to consumer, had proved to be more efficient and beneficial for farmers. The absence of intermediaries had resulted in minimal marketing costs and zero marketing margins, thereby reducing the price spread considerably. Consequently, the producer's share in the consumer's rupee had been remarkably high, ensuring better income realisation for farmers. In contrast, Channel II had involved multiple intermediaries such as wholesalers and retailers, which had increased marketing costs and added margins at each stage. This had led to a higher price spread and a comparatively lower share of producers in the final consumer price. Moreover, the marketing efficiency in Channel II had been significantly lower, indicating inefficiencies in the system. The findings suggested that shorter marketing channels had enhanced economic returns to producers and improved overall efficiency. Therefore, promoting direct marketing practices and reducing unnecessary intermediaries had been essential for ensuring higher profitability and strengthening the marketing system of green gram in the study area.

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