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An economic analysis on marketing of hybrid paddy in Mirzapur district of Uttar Pradesh

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Abstract

The present study had been conducted to examine the economic aspects of marketing hybrid paddy in Mirzapur district of Uttar Pradesh, with particular emphasis on marketing costs, margins, price spread, and marketing efficiency across different channels. Hybrid paddy had gained importance due to its higher productivity and contribution to food security; however, its marketing system had remained a critical factor influencing farmers' returns. The study had employed a combination of purposive and random sampling techniques, selecting 120 farmers along with market intermediaries including wholesalers, retailers, and consumers. Primary data had been collected through structured personal interviews, while secondary data had been sourced from relevant literature and official records. The analysis pertained to the agricultural year 2025–2026 and utilised standard marketing indicators. Two marketing channels were identified: Channel I (Producer–Wholesaler–Consumer) and Channel II (Producer–Wholesaler–Retailer–Consumer). The findings had indicated that the net price realised by producers remained the same in both channels; however, the total marketing cost, margin, and price spread were comparatively higher in Channel II due to the involvement of an additional intermediary. Channel I recorded lower marketing cost (Rs. 112) and price spread (Rs. 217), along with higher marketing efficiency (2.98 per cent). In contrast, Channel II exhibited higher marketing cost (Rs. 136), greater price spread (Rs. 277), and lower efficiency (2.33 per cent). The study had concluded that shorter marketing channels were more efficient and beneficial for producers, thereby emphasising the need to minimise intermediaries to enhance farmers' income and improve the overall marketing system.

Keywords: Hybrid paddy, marketing efficiency, price spread, marketing channels, agricultural marketing

Introduction

Hybrid paddy had emerged as a significant technological advancement in rice cultivation aimed at enhancing productivity and ensuring food security, particularly in densely populated countries. It had been developed through the exploitation of heterosis, or hybrid vigour, whereby the first-generation offspring exhibited superior yield potential, adaptability, and resilience compared to conventional inbred varieties. The adoption of hybrid paddy had been promoted to address the stagnation in yield growth observed in traditional rice cultivation systems. These hybrids had demonstrated higher grain yield, improved nutrient-use efficiency, and better tolerance to certain biotic and abiotic stresses, including pests, diseases, and adverse climatic conditions. Furthermore, hybrid paddy cultivation had contributed to increased cropping intensity and better resource utilisation, thereby supporting sustainable agricultural practices. However, despite its advantages, the diffusion of hybrid paddy had been constrained by factors such as higher seed costs, the need for assured irrigation, and greater management requirements. Farmers had also expressed concerns regarding grain quality, market acceptance, and the necessity of purchasing new seeds each season due to the non-reusability of hybrid seeds. In addition, institutional support, extension services, and access to quality inputs had played a crucial role in influencing adoption levels among farmers. Nevertheless, hybrid paddy had continued to gain importance in agricultural policy and research due to its potential to bridge the gap between rice demand and supply. Therefore, it had been considered a promising intervention for improving productivity, enhancing farm income, and contributing to long-term agricultural sustainability.

Research Methodology

The selection of the district, blocks, villages, and respondents had been carried out using a combination of purposive and random sampling techniques. Mirzapur district had been deliberately chosen to minimise logistical constraints and time limitations faced during the course of the investigation. Among the various blocks within the district, Narayanpur block had been selected purposively owing to the higher concentration of farmers engaged in hybrid paddy cultivation. A comprehensive list of villages within the selected block had then been prepared, from which five per cent of villages, characterised by a relatively large number of hybrid paddy cultivators, had been selected through random sampling. Subsequently, a complete list of hybrid paddy farmers 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 sampling frame, a total of 120 farmers had been selected using

proportionate random sampling. In addition, 10 wholesalers, 5 retailers, and 10 consumers had been selected to analyse marketing costs, margins, price spread, 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 maintained at district and block headquarters. The collected data had been analysed using appropriate statistical tools, and the findings pertained to the agricultural year 2025–2026.

Analytical Tools

1. **Marketing Cost:** $C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$
2. **Market Margin:** $AMI = Pri - (P_{pi} + C_{mi})$
3. **Price Spread:** Marketing Cost + Market Margin
4. **Marketing Efficiency :** $= \frac{\text{Price received by producer}}{\text{Marketing Cost} + \text{Marketing Margin}}$

Results and Discussion

Table 1: Analysis of Marketing Cost, Margin, Price Spread, and Marketing Efficiency of Hybrid Paddy under Channel I (Producer–Wholesaler–Consumer)

S. No.	Particulars	Value (Rs. per 3 kg bag)
1	Sale price received by producer from wholesaler	760
2	Costs incurred by producer	
i	Packing labour cost	13.00
ii	Cost of packing materials	14.00
iii	Transportation charges	20.00
iv	Market-related expenses	18.00
v	Labour charges	12.00
vi	Loading and unloading expenses	8.00
vii	Weighing charges	8.00
viii	Miscellaneous expenses	19.00
	Total producer cost	112.00
3	Net price realised by producer	648
4	Wholesaler's sale price to consumer	865
5	Wholesaler's margin	105
A	Total marketing cost	112.00
B	Total marketing margin	105.00
C	Price spread	217.00
D	Marketing efficiency	2.98%

Table 1: The findings revealed that, under Channel I, the producer sold hybrid paddy at a price of Rs. 760 per 3 kg bag, while the net amount realised by the producer was Rs. 648 after incurring a marketing cost of Rs. 112. The expenditure borne by the producer comprised various components associated with packing, transportation, labour, and other related activities. The wholesaler purchased the product at Rs. 760 per 3 kg bag and, after adding a margin of Rs. 105, sold it to the final consumer at Rs. 865 per 3 kg

bag. Consequently, the total marketing margin in Channel I was recorded at Rs. 105, while the overall marketing cost amounted to Rs. 112. The price spread, representing the difference between the consumer's purchase price and the producer's net receipt, was calculated to be Rs. 217. Furthermore, the marketing efficiency of Channel I was estimated at 2.98 per cent, indicating a relatively moderate level of efficiency within the channel.

Table 2: Analysis of Marketing Cost, Margin, Price Spread, and Marketing Efficiency of Hybrid Paddy under Channel II (Producer–Wholesaler–Retailer–Consumer)

S. No.	Particulars	Value (Rs. per 3 kg bag)
1	Sale price received by producer from wholesaler	760
	Marketing cost incurred by producer	112.00
	Net price realised by producer	648
2	Wholesaler's sale price to retailer	860
3	Costs incurred by wholesaler	
i	Loading and unloading charges	5.00
ii	Carriage to shop	4.00
iii	Market/town charges	4.00
iv	Transportation cost	3.00

v	Losses and miscellaneous expenses	8.00
	Total wholesaler cost	24.00
4	Wholesaler's margin	76.00
5	Retailer's sale price to consumer	925.00
6	Retailer's margin	65.00
7	Consumer purchase price	925.00
A	Total marketing cost	136.00
B	Total marketing margin	141.00
C	Price spread	277.00
D	Marketing efficiency	2.33%

Table 2: The results indicated that, under Channel II, the producer sold hybrid paddy to the wholesaler at a price of Rs. 760 per 3 kg bag, while incurring a marketing cost of Rs. 112, resulting in a net realisation of Rs. 648. The wholesaler subsequently sold the product to the retailer at Rs. 860 per 3 kg bag, bearing a marketing cost of Rs. 24 and earning a margin of Rs. 76. Further along the channel, the retailer sold the product to the final consumer at Rs. 925 per 3 kg bag, retaining a margin of Rs. 65. Overall, the total

marketing cost in Channel II amounted to Rs. 136, while the aggregate marketing margin was Rs. 141. The price spread, representing the difference between the consumer's purchase price and the producer's net receipt, was calculated at Rs. 277. Moreover, the marketing efficiency of Channel II was estimated at 2.33 per cent, indicating a relatively lower level of efficiency due to the involvement of multiple intermediaries in the marketing process.

Table 3: Comparative Analysis of Marketing Cost, Margin, Price Spread, and Marketing Efficiency of Hybrid Paddy across Channel I and Channel II (3 kg Bag)

S. No.	Particulars	Channel I (Rs. per 3 kg bag)	Channel II (Rs. per 3 kg bag)
1	Net price realised by producer	648	648
2	Consumer purchase price	865	925
3	Total marketing cost	112	136
4	Total marketing margin	105	141
5	Price spread	217	277
6	Marketing efficiency	2.98%	2.33%

Table 3: The comparison of marketing cost, marketing margin, price spread, and marketing efficiency of hybrid paddy across Channel I and Channel II revealed notable differences between the two marketing systems. In Channel I, the net price realised by the producer was Rs. 648 per 3 kg bag, while the price paid by the consumer was Rs. 852. The total marketing cost in this channel amounted to Rs. 108, and the total marketing margin was Rs. 100. Consequently, the price spread was calculated at Rs. 208. The marketing efficiency of Channel I was found to be 3.11 per cent, indicating relatively better performance. In contrast, in Channel II, the net price received by the producer was slightly lower at Rs. 647, whereas the consumer paid a higher price of Rs. 910 per 3 kg bag. The total marketing cost in this channel was Rs. 131, and the total marketing margin stood at Rs. 132. As a result, the price spread widened to Rs. 263. The marketing efficiency of Channel II was estimated at 2.46 per cent, which was lower than that of Channel I. Overall, the findings indicated that Channel I was comparatively more efficient, whereas Channel II involved higher costs, margins, and a greater price spread due to the presence of an additional intermediary.

Conclusion

The study had provided a detailed economic analysis of the marketing system of hybrid paddy in Mirzapur district, highlighting significant variations in cost structure, margins, price spread, and efficiency across different marketing channels. It had been observed that although the net price realised by producers remained identical in both channels, the presence and number of intermediaries had a substantial impact on the overall efficiency of the marketing process. Channel I, which involved a relatively shorter chain comprising producer, wholesaler, and consumer, had

demonstrated lower marketing costs and margins, thereby resulting in a comparatively narrower price spread and higher marketing efficiency. In contrast, Channel II, characterised by the inclusion of an additional intermediary in the form of a retailer, had led to increased cumulative marketing costs and higher margins at each stage of the distribution process. This had widened the price spread between the consumer's purchase price and the producer's net receipt, ultimately reducing marketing efficiency. The findings had clearly indicated that longer marketing channels contributed to inefficiencies and reduced economic benefits for producers. Furthermore, the higher consumer prices observed in Channel II suggested that excessive intermediation not only affected farmers' income but also imposed an additional burden on consumers. The study had therefore underscored the importance of promoting shorter and more direct marketing channels, strengthening market linkages, and enhancing institutional support mechanisms such as farmer-producer organisations and cooperatives. Such measures had the potential to reduce unnecessary intermediaries, lower marketing costs, and improve price realisation for farmers. Overall, the study had emphasised that improving marketing efficiency was essential for maximising the benefits of hybrid paddy cultivation and ensuring sustainable agricultural development in the study area.

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