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Marketing of turmeric (*Curcuma longa* L.) in Nanded district: An analysis of cost, margin and price spread

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Abstract

The present study was carried out to assess the marketing system of turmeric and to estimate the marketing cost, marketing margins and price spread in Nanded district of Maharashtra. A multistage sampling technique was employed for the selection of 90 turmeric growers from three selected talukas and nine villages. Primary information was collected from the sampled farmers through personal interviews, while secondary information was obtained from relevant government departments, market records and published sources. Two major marketing channels were identified: Channel I, involving direct sale from producer to consumer, and Channel II, involving producer, wholesaler, processor, retailer and consumer. Channel II accounted for the larger share of marketed turmeric (57.50%), whereas Channel I accounted for 42.47%. The marketing cost borne by the producer was Rs. 173.64 per quintal in Channel I and Rs. 197.36 per quintal in Channel II. In Channel II, the total marketing cost incurred by the producer and intermediaries together was Rs. 1,325.73 per quintal, while the combined marketing margin of intermediaries was Rs. 3,000 per quintal. The price spread was Rs. 173.66 per quintal in Channel I compared with Rs. 4,325.73 per quintal in Channel II. The producer's share in the consumer's rupee was considerably higher in Channel I (96.50%) than in Channel II (74.94%). Further, Acharya's marketing efficiency index was 27.60 for Channel I and 2.99 for Channel II, indicating the greater efficiency of the direct marketing channel. The study suggests that strengthening direct marketing opportunities, improving farmer-consumer linkages and reducing unnecessary marketing costs can enhance the returns and marketing efficiency of turmeric growers in Nanded district.

Keywords: Turmeric, marketing cost, marketing margin, price spread, marketing efficiency, producer's share, marketing channel, Nanded

Introduction

Agriculture continues to be a major contributor to the Indian economy by providing employment, income and livelihood opportunities to a substantial proportion of the rural population. The increasing commercialization and diversification of agriculture have encouraged farmers to move towards high-value commercial crops that offer better income and market opportunities. Among the important commercial spice crops, turmeric (*Curcuma longa* L.) occupies a prominent position because of its wide use in food, pharmaceutical, cosmetic, nutraceutical and other value-added industries. Besides its importance as a spice, turmeric generates economic activities through production, processing, transportation, storage, trading and other post-harvest operations.

India has a leading position in the global turmeric economy in terms of production, consumption and export. Turmeric cultivation is also economically important in Maharashtra, where the crop is grown as a commercial enterprise in several districts. The economic performance of turmeric cultivation, however, is not determined solely by production and productivity. The returns obtained by growers are also influenced by the manner in which the produce is marketed, the number of intermediaries involved, the marketing services performed and the costs incurred at different stages of the supply chain. Thus, an efficient marketing system is essential for ensuring a reasonable share of the final consumer price to the producer.

After harvesting, turmeric undergoes several post-harvest operations before reaching the market.

These include curing, drying, polishing, grading, sorting, packing, transportation, storage and, in some cases, processing. Each operation adds value to the commodity but also involves expenditure. The manner and extent of these operations differ according to the marketing channel followed by the producer. Consequently, the final price of turmeric is influenced by both the physical movement of the commodity and the services performed by different market participants.

The marketing of turmeric generally involves a chain of participants such as producers, village traders, wholesalers, processors, retailers and consumers. Depending upon the marketing arrangement, farmers may sell their produce directly to consumers or through one or more intermediaries. Intermediaries perform important functions such as assembling, transportation, grading, storage, processing and distribution; however, their involvement may also increase the overall marketing cost and the difference between the producer's net realization and the consumer's purchase price. Therefore, understanding the structure and functioning of different marketing channels is essential for evaluating the economic efficiency of turmeric marketing.

Marketing cost constitutes the expenditure incurred by producers and market intermediaries in performing various marketing functions. It may include expenses on loading and unloading, transportation, packing, weighing, grading and sorting, storage, processing, market fees, commission and other related activities. Marketing margin, on the other hand, represents the amount retained by a market intermediary after accounting for the purchase price and the marketing expenses incurred. The estimation of marketing costs and margins helps in understanding how the consumer's expenditure is distributed among producers and different market functionaries.

Price spread is an important measure for assessing the performance of an agricultural marketing system. It represents the difference between the price paid by the consumer and the net price received by the producer. A large price spread may indicate substantial marketing costs and intermediary margins, whereas a smaller spread generally reflects a greater proportion of the consumer's payment reaching the producer. Similarly, the producer's share in the consumer's rupee provides an indication of the proportion of the final consumer price retained by the grower. These measures, together with marketing efficiency, are useful for comparing alternative marketing channels and identifying relatively advantageous arrangements for producers.

Turmeric marketing is affected by several factors, including fluctuations in market prices, transportation expenses, availability of storage and processing facilities, access to market information, dependence on intermediaries and the bargaining position of farmers. These factors can influence the marketing decisions of growers and the price ultimately realized from their produce. In particular, the presence of several market functionaries may increase the marketing cost and margins and thereby widen the price spread between the producer and consumer. Hence, an analysis of marketing channels is necessary to identify the costs and margins at different stages and to determine the efficiency of alternative marketing arrangements.

Nanded district of Maharashtra provides an appropriate setting for studying turmeric marketing because of its agricultural importance and the presence of market infrastructure and trading activities associated with agricultural commodities. The district has established Agricultural Produce Market Committee (APMC) markets and a network of traders and other market functionaries that facilitate the movement of produce from

farmers to different markets. The existing marketing arrangements provide an opportunity to examine how turmeric moves from producers to consumers and how the value of the commodity is distributed among the participants involved in the marketing process.

A systematic analysis of turmeric marketing at the producer level is therefore important for determining the quantity marketed through different channels, identifying the marketing costs incurred by producers and intermediaries, estimating the margins earned by market functionaries and measuring the price spread and producer's share in the consumer's rupee. Such an analysis can help identify comparatively efficient marketing channels and indicate areas where unnecessary marketing costs and excessive margins can be reduced.

In view of the above considerations, the present study was undertaken to analyse the marketing system of turmeric in Nanded district of Maharashtra, with particular emphasis on marketing cost, marketing margin and price spread. The study also aims to compare the identified marketing channels in terms of marketing efficiency and producer's share in the consumer's rupee. The findings are expected to provide useful information for turmeric growers, market intermediaries and policymakers in developing more efficient, transparent and remunerative marketing arrangements.

Objective of the Study

To work out marketing cost, margin and price spread of turmeric growers

Materials and Methods

The study was conducted in Nanded district of the Marathwada region of Maharashtra, where turmeric is cultivated as an important commercial crop and forms part of the agricultural economy. The district has established marketing infrastructure, including APMC markets, traders, commission agents and storage facilities, which facilitate the marketing of turmeric. Nanded was purposively selected considering the importance and commercial significance of turmeric cultivation in the district.

A multistage sampling procedure was adopted for the selection of turmeric growers. In the first stage, three talukas with comparatively higher turmeric cultivation were purposively selected based on secondary information obtained from the District Agriculture Office and other relevant sources. In the second stage, three turmeric-growing villages were selected randomly from each selected taluka, resulting in nine villages. In the final stage, ten turmeric growers were randomly selected from each village, giving a total sample of 90 turmeric growers. Primary data were collected from the selected respondents using a pre-tested structured interview schedule.

The collected data were used to examine the prevailing turmeric marketing practices and estimate the marketing cost, marketing margins and price spread across the identified marketing channels. Secondary information was obtained from relevant government departments, APMC records and published sources. Nanded district's APMC network, including markets such as Bhokar, Nanded, Loha and Kandhar, provides important facilities for the marketing and distribution of agricultural produce, including turmeric.

Estimation of Marketing Cost, Marketing Margin and Price Spread of Turmeric

The marketing pattern of turmeric was examined by identifying the marketing channels and estimating marketing cost,

marketing margin, price spread and producer's share in the consumer's rupee. These measures were used to assess the distribution of the consumer's price among turmeric growers and different market intermediaries.

(a) Marketing Channels

The marketing channels were identified by tracing the movement of turmeric from the producer to the final consumer through different intermediaries. The major intermediaries considered were village traders, commission agents, wholesalers and retailers. The identified channels were compared to understand the movement of produce and the returns received by different market participants.

(b) Marketing Cost

Marketing cost included the expenses incurred by turmeric growers and intermediaries during the marketing of produce. The major components included transportation, loading and unloading, packing, storage, market charges, commission charges and other incidental expenses. The total marketing cost was estimated by aggregating the costs incurred at different stages of each marketing channel.

$$\text{Marketing Cost (MC)} = \sum C_i$$

Where

MC = Total marketing cost

C_i = Individual marketing cost incurred at different stages of marketing

(c) Marketing Margin

The marketing margin of each intermediary was estimated as the difference between its selling price and purchase price after deducting the marketing cost incurred by the respective intermediary. It indicated the margin retained by different market functionaries involved in turmeric marketing.

$$\text{Marketing Margin (MM}_i\text{)} = SP_i - PP_i - MC_i$$

Where

MM_i = Marketing margin of the i th intermediary

SP_i = Selling price of the i th intermediary

PP_i = Purchase price of the i th intermediary

MC_i = Marketing cost incurred by the i th intermediary

(d) Price Spread

Price spread was estimated as the difference between the price paid by the final consumer and the net price received by the turmeric producer. It represented the portion of the consumer's price accounted for by marketing costs and margins of intermediaries.

$$\text{Price Spread (PS)} = CP - NP_p$$

Where

PS = Price spread

CP = Price paid by the final consumer

NP_p = Net price received by the producer

(e) Producer's Share in Consumer's Rupee

The producer's share in the consumer's rupee was estimated to determine the proportion of the final consumer price received by the turmeric grower.

$$\text{Producer's Share (\%)} = (NP_p / CP) \times 100$$

Where

NP_p = Net price received by the producer

CP = Price paid by the final consumer

The estimated marketing cost, marketing margins, price spread and producer's share were compared across the identified marketing channels to assess their relative efficiency and determine the most advantageous marketing channel for turmeric growers in Nanded district.

Results and Discussion

Channel-wise Quantity Sold of Turmeric (qt/ha)

The channel-wise quantity of turmeric sold was analysed to determine the distribution of marketed produce across different marketing channels. The analysis provides a comparison of the quantity marketed through direct and intermediary-based channels and indicates the relative importance of each channel in turmeric marketing.

Table 1: Channel-wise Quantity Sold of Turmeric (qt/ha)

Sr. No	Marketing channels	Quantity marketed (qt/ha)	Percent (%)
1	Channel 1 (Producer → Consumer)	23.36	42.47
2	Channel 2 (Producer → Wholesaler → Processor → Retailer → Consumer)	31.63	57.50
	Total	55	100

Note: figures in parentheses indicate percentage of the total marketed surplus

Table 1 presents the channel-wise quantity of turmeric sold per hectare. Overall, a total marketed quantity of 55 quintals per hectare was recorded across the identified supply chains. Breaking down the sales by marketing channels, Channel 2 (Producer → Wholesaler → Processor → Retailer → Consumer) emerged as the dominant route for disposal. Through this extended channel, 31.63 quintals were marketed, accounting for the majority share at 56.36 per cent of the total surplus. Meanwhile, Channel 1 (Producer → Consumer) served as the direct marketing route, handling 23.36 quintals, which constituted 41.81 per cent of the overall marketed quantity.

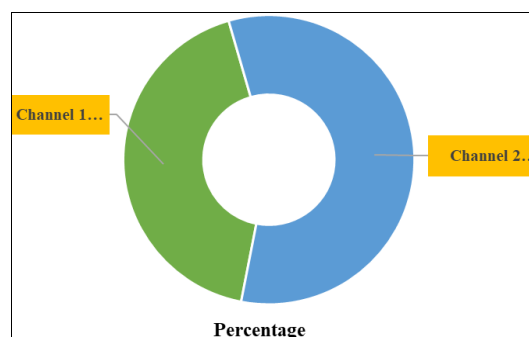


Fig 1: Channel-wise Quantity Sold of Turmeric (Per hectare)

Marketing Cost Incurred by Turmeric growers for channel I (Rs/qt)

The marketing cost incurred by turmeric growers under Channel I was analysed to determine the expenses borne by producers in the direct marketing of turmeric to consumers. The analysis considered the major marketing expenses involved in the movement and sale of produce, such as transportation, loading and unloading, packing and other related charges.

Table 2: Marketing Cost Incurred by Turmeric growers for channel I (Rs/qt)

Sr. No	Items of Cost	Chanel I
1	Loading charges	25.77
2	Cost of gunny bag	30.00
3	Transport charges	35.10
4	Unloading charges	25.77
5	Weighing charges	7.00
6	Grading/Sorting	50.00
7	Total Marketing Cost	173.64

Note: Figures in parentheses indicates percentages relative to the consumer purchase price

Table 2 presents the item-wise marketing costs incurred by turmeric growers per quintal when selling their produce through Channel I. Overall, the total marketing cost borne by the farmers in this direct channel amounted to Rs 173.64 per quintal.

A closer look reveals that grading and sorting formed the largest

component of the marketing cost, accounting for Rs 50.00 per quintal. This was followed by logistical and packaging expenses, with transport charges at Rs 35.10 per quintal and the cost of gunny bags at Rs 30.00 per quintal. The physical handling of the produce also contributed significantly, with loading and unloading charges recorded equally at Rs 25.77 per quintal each. Meanwhile, weighing charges were minimal at Rs 7.00 per quintal, which highlights the financial advantage of avoiding intermediaries in this channel.

Marketing Costs and margins across intermediaries in channel II (Rs/qt)

The cost and margin structure of Channel II was examined to understand how marketing expenses and intermediary returns contribute to the final price of turmeric. The analysis considered the expenses borne by the producer, wholesaler, processor and retailer at different stages of the marketing process and the margins earned by each intermediary.

Table 3: Marketing Costs and margins across intermediaries in channel II (Rs/qt)

Sr. No	Particulars	Chanel II
A	Marketing cost incurred by producer	
1	Loading and unloading charge	55.77
2	Cost of gunny bags	40.00
3	Transport charges	92.16
5	Weighing charges	9.43
6	Grading/sorting	0.00
8	Total Cost incurred by producer	197.36
9	Selling price of producer	13131.11
10	Net price received by producer	12933.75
B	Marketing cost incurred by wholesaler	
1	Loading and unloading charges	60.00
2	Cost of gunny bags	25.00
3	Transport charges	194.77
5	Weighing charges	14.00
6	Grading/sorting	30.00
7	License fee	1.24
8	Market fees	5.48
9	Commission charges	140.00
10	Total Cost incurred by wholesaler	470.49
11	Marketing margin of wholesaler	1000.00
12	Selling price of wholesaler	14601.60
C	Marketing cost incurred by Processor	
1	Loading and unloading charges	60.00
2	Packing charges	20.00
3	Transport charges	34.88
4	Weighing charges	10.00
5	Grading/sorting	5.00
6	Milling charges	200.00
7	Labour charges	28.00
8	Electricity charges	90.00
9	Total Cost incurred by processor	447.88
10	Marketing margin of processor	1200.00
11	Selling price of processor	16249.48
D	Marketing cost incurred by Retailer	
1	Loading and unloading charges	50.00
2	Packing charges	28.00
3	Transport charges	40.00
4	Storage charges	45.00
5	Taxes	12.00
6	Labour charges	35.00
7	Total cost incurred by retailer	210.00
8	Marketing margin of retailer	800
9	Purchase price of consumer	17259.48
E	Total marketing cost (producer + intermediaries)	1325.73
F	Total marketing margin (intermediaries)	3000.00

Note: Figures in parentheses indicates percentages relative to the consumer purchase price

Table 3 presents the marketing costs and margins incurred by the producer and various intermediaries per quintal of turmeric in Channel II (Producer → Wholesaler → Processor → Retailer → Consumer). Overall, the total marketing cost incurred by the producer and all intermediaries combined was Rs 1,325.73 per quintal, while the total marketing margin retained by the intermediaries amounted to Rs 3,000.00 per quintal.

At the producer level, the total marketing cost incurred was Rs 197.36 per quintal, resulting in a net price received of Rs 12,933.75 per quintal after deducting these expenses from their selling price.

Among the different market intermediaries, the wholesaler incurred a total marketing cost of Rs 470.49 per quintal (heavily driven by transport and commission charges) and secured a marketing margin of Rs 1,000.00. The processor incurred a total cost of Rs 447.88 per quintal—primarily due to milling and electricity charges—but retained the highest marketing margin

among all intermediaries at Rs 1,200.00. Finally, the retailer incurred a marketing cost of Rs 210.00 per quintal and earned a margin of Rs 800.00. Ultimately, the accumulation of the producer's price, along with the successive marketing costs and margins of all intermediaries, resulted in a final purchase price of Rs 17,259.48 per quintal for the end consumer.

Price Spread Analysis of Different Channels (Rs/q)

The price spread across the identified turmeric marketing channels was analysed to assess the distribution of the consumer's price among producers and market intermediaries. The comparison considers the producer's gross and net price, marketing costs, intermediary margins, consumer price and marketing efficiency, thereby indicating the relative performance of direct and intermediary-based marketing channels.

Table 4: Price Spread Analysis of Different Channels (Rs/q)

Sr. No	Particulars	Channel I	Channel II
	Producer		
1	Gross Price received by the farmer	4966.66	13131.11
	Marketing cost	173.66 (3.50)	197.37 (1.14)
	Net Price received	4793.00 (96.50)	12933.75 (74.94)
	Wholesaler		
2	Purchase price	-	13131.11
	Marketing cost	-	470.49
	Marketing margin	-	1000.00
	Selling price	-	14601.60
	Processor		
3	Purchase price	-	14601.60
	Marketing cost	-	447.88
	Marketing margin	-	1200.00
	Selling price	-	162429.48
	Retailer		
4	Purchase price	-	162429.48
	Marketing cost	-	210.00
	Marketing margin	-	800.00
	Selling price	-	17259.48
	Consumer price paid		
5	Consumer purchase price	4966.66	17259.48
	Price spread	173.66	4325.73
	Marketing efficiency	27.60	2.99

Table 4 details the price spread, producer's share, and marketing efficiency across two distinct marketing channels for turmeric on a per quintal basis.

In Channel I (direct marketing), the gross price received by the farmer - which directly equates to the consumer purchase price - was Rs 4,966.66. After accounting for a minor marketing cost of Rs 173.66, the net price realized by the producer stood at Rs 4,793.00. Because there were no intermediaries involved in this route, the producer secured a maximum 96.50 per cent share of the consumer's rupee. Consequently, the price spread was limited only to the farmer's marketing cost (Rs 173.66), reflecting a highly robust marketing efficiency index of 27.60.

Regarding Channel II, the involvement of multiple intermediaries (wholesaler, processor, and retailer) resulted in a substantially higher consumer purchase price of Rs 17,259.48. The producer received a gross price of Rs 13,131.11, and after deducting their marketing expenses, realized a net price of Rs 12,933.75. This translates to a 74.94 per cent share of the final consumer price. The combined marketing costs and margins

absorbed by the various middlemen throughout the supply chain escalated the total price spread to Rs 4,325.73 per quintal, which proportionally reduced the marketing efficiency index to 2.99.

Comparing the two supply chains, it is evident that while Channel I is more efficient in terms of price spread and the producer's share in the consumer rupee, Channel II facilitates the sale of processed/value-added turmeric, thereby generating a significantly higher absolute net return for the farmer per quintal.

Marketing Efficiency Comparison of Turmeric

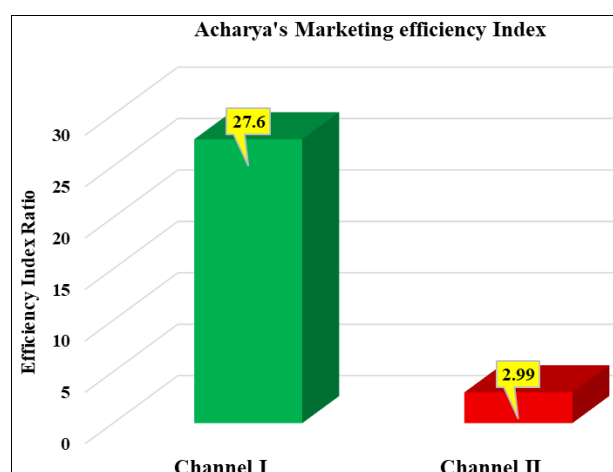
The marketing efficiency of the identified turmeric channels was compared using Acharya's marketing efficiency index to evaluate the relative efficiency of alternative marketing arrangements. The comparison considered the consumer price, total marketing cost, intermediary margins and net price received by the farmer, thereby highlighting the effect of marketing costs and intermediary involvement on the overall efficiency of each channel.

Table 5: Marketing Efficiency Comparison of Turmeric

Sr. No	Particulars	Channel I	Channel II
1	Price received by consumer (v)	4966.66	17259.48
1	Total Marketing cost (I)	173.66	1319.02
2	Total Margin of Intermediaries (M)	0.00	3000.00
3	Price Received by farmer (Fp)	4793.00	12933.75
5	Acharya's marketing efficiency index [E=Fp/(I+M)]	27.60	2.99

Table 5 compares the marketing efficiency of two different turmeric supply chains using Acharya's formula. In Channel I (direct sales), the absence of middlemen meant zero intermediary margins and a low marketing cost of Rs 173.66. Consequently, the farmer received Rs 4,793.00 out of the Rs 4,966.66 paid by the consumer. This lack of intermediary overhead resulted in a highly favourable marketing efficiency index of 27.60.

In contrast, Channel II involved multiple intermediaries. While it generated a much higher net price for the farmer (Rs 12,933.75) and final consumer price (Rs 17,259.48), it also absorbed heavy marketing costs (Rs 1,319.02) and high intermediary margins (Rs 3,000.00). These heavy supply chain expenses drastically reduced its efficiency index to just 2.99. Overall, while Channel II provides higher absolute financial returns for the producer, Channel I is mathematically much more efficient due to the complete elimination of middlemen.

**Fig 2:** Marketing Efficiency Comparison of Turmeric

Conclusion

The study of turmeric marketing in Nanded district identified two major marketing channels: Channel I (Producer → Consumer) and Channel II (Producer → Wholesaler → Processor → Retailer → Consumer). Channel II handled the larger proportion of marketed turmeric, reflecting the significant role of intermediaries in the distribution and processing of the produce. However, the comparative analysis indicated that Channel I was more efficient due to its simpler structure, lower marketing cost and absence of intermediary margins.

In Channel I, the total marketing cost was Rs. 173.64 per quintal, with grading and sorting, transportation and gunny bags constituting the major components. Direct sale to consumers enabled growers to avoid intermediary charges and retain a greater proportion of the consumer's payment. In contrast, Channel II involved several market functionaries and recorded a combined marketing cost of Rs. 1,325.73 per quintal and total intermediary margins of Rs. 3,000.00 per quintal. The processor earned the highest margin, followed by the wholesaler and

retailer, indicating the substantial contribution of intermediary activities to the final price of turmeric.

The price spread analysis further demonstrated the advantage of direct marketing. The price spread was Rs. 173.66 per quintal in Channel I, compared with Rs. 4,325.73 per quintal in Channel II. Similarly, the producer's share in the consumer's rupee was substantially higher in Channel I (96.50%) than in Channel II (74.94%). These findings indicate that a greater proportion of the consumer's payment accrued to the producer when turmeric was marketed directly.

The assessment based on Acharya's marketing efficiency index confirmed the superior efficiency of Channel I, which recorded an index of 27.60 compared with 2.99 for Channel II. Although Channel II provided a higher absolute net price to growers and supported processing and broader market distribution, the involvement of multiple intermediaries increased the marketing costs, margins and price spread.

Overall, Channel I was found to be the more efficient and producer-oriented marketing channel in terms of marketing cost, price spread, producer's share and marketing efficiency. The findings suggest that strengthening direct marketing facilities, improving farmer-consumer linkages and promoting more efficient market arrangements could help turmeric growers obtain better returns and improve the overall efficiency of turmeric marketing in Nanded district.

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