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Marketing management of Grape processed products in Maharashtra

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Abstract
Grape (Vitis vinifera) is an economically important fruit crop in India, ranking third in area under cultivation after citrus and banana. Globally, grape production is estimated at approximately 68.9 million tonnes, underscoring its significance among fruit crops. In India, grapes were cultivated over an area of about 139 thousand hectares, with a production of nearly 2,920 thousand tonnes during 2017-18 (NHB). Maharashtra is the leading grape-producing state, accounting for 62.7 percent of the country's total output. The major grape-growing districts in the state include Nashik, Sangli, Pune, Ahmednagar, and Solapur. Owing to their highly perishable nature, grapes are extensively processed into value-added products such as wine, raisins, and juice. Maharashtra dominates the processing sector, housing 78 of the country's 95 wine industries and 69 raisin-processing units.

A study examining the marketing costs of grape-based processed products across five major districts of Maharashtra revealed that a reduction in the number of intermediaries in the marketing channels significantly enhanced producers' profit margins. Analysis of data from 14 grape wine industries showed that the direct producer-to-consumer marketing channel generated the highest profit margins and marketing efficiency when compared with channels involving retailers and wholesalers. Similarly, findings from 19 grape raisin industries indicated that fewer intermediaries in the supply chain resulted in higher producer margins. The study concluded that direct marketing channels are more advantageous for grape producers, emphasizing the efficiency and profitability associated with minimizing intermediary participation. These results highlight the importance of streamlined distribution systems in improving income levels of grape farmers in Maharashtra.

Keywords: Marketing cost, marketing efficiency, marketing channels, farmer income

Introduction
Grape (Vitis vinifera) occupies an important position in India's horticultural sector and ranks as the third most widely cultivated fruit crop in the country, after citrus and banana. At the global level, grapes constitute a major fruit crop, with an estimated production of approximately 68.9 million tonnes, placing them among the leading fruit crops worldwide, following citrus, banana, and apple. In India, grape cultivation extends over an area of about 139 thousand hectares, with an estimated production of nearly 2,920 thousand tonnes during the 2017-18 period (NHB). The major grape-growing states include Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, Punjab, Haryana, western Uttar Pradesh, Rajasthan and Madhya Pradesh. Among these, Maharashtra emerges as the dominant producer, contributing approximately 62.7 percent of the national grape output. The state's prominence in grape cultivation and processing is further reflected in key producing districts such as Nashik, Sangli, Pune, Ahmednagar and Solapur. Owing to the highly perishable nature of grapes, processing into value-added products such as wine, raisins, and juice is essential to extend shelf life and reduce post-harvest losses. This necessity has led to the establishment of a well-developed grape processing industry in India. Currently, the country has 95 wine-processing units, of which 78 are located in Maharashtra. In addition, the state accounts for 69 raisin-processing industries, reinforcing its status as a major center for grape processing activities. The concentration of grape production and processing industries in Maharashtra underscores the need for systematic examination of the marketing and economic aspects of grape processing. Efficient marketing and processing mechanisms are crucial for minimizing losses associated with perishability and for maximizing profitability.

Value-added grape products such as wine, raisins and juice not only facilitate preservation but also generate higher returns, thereby enhancing the economic viability of grape cultivation.

In this context, understanding the structure and functioning of grape processing industries and their associated marketing channels is of critical importance. An analysis of these dynamics can assist stakeholders in developing strategies to improve marketing efficiency, reduce intermediary costs, and increase profit margins for producers. Accordingly, the present study focuses on these dimensions to provide insights and recommendations that may benefit grape growers and processors in Maharashtra as well as other grape-producing regions of India.

Objectives

1. To study the marketing cost of various marketing channels of grape processed products.
2. To identify effective marketing channel for distribution of grape processed products.

Methodology:

Marketing Efficiency

There are three methods of marketing efficiency i.e. Conventional method, Shepherd method and Acharya method.

Pricing marketing efficiency

The primary data was collected from farmers, processors, commission agents, wholesalers and retailers by preparing schedule and by personal interviews on marketing cost, margins and price spread for different distribution channels. Marketing efficiency indicated the ratio of value added for the goods to the marketing cost and was calculated by the following formula using Conventional method.

$$ME = \left(\frac{V}{I}\right) - 1$$

Where, V = Value added to the commodity
I = Total marketing cost incurred
ME = Index of Marketing efficiency

OR

Marketing Efficiency by Shepherd's method

$$ME = \frac{RP\ (Retailers\ Sale\ Price)}{MC\ (Total\ Marketing\ Cost)}$$

Results and Discussions

Channel wise marketing cost of grape processed products

1. Channel wise marketing cost and marketing efficiency of Grape Wine

Five districts namely Nashik, Sangli, Pune, Solapur and Ahmednagar were purposively selected for the collection of primary data on marketing costs incurred by various intermediaries involved in the marketing of processed grape products. Maharashtra has a total of 78 grape wine-processing industries, of which 48 are farmer's producer grape wine industries. From these, approximately 30 percent of the farmer's producer industries, comprising 14 grape wine-processing units, were selected as the sample for the study. Primary data pertaining to the marketing costs of grape wine were collected from these sampled industries. In addition, information was gathered on the different marketing channels employed by these industries for the distribution of grape wine. The following marketing channels were identified and analyzed during the course of the study.

Channel I: Producer → Consumer
Channel II: Producer → Retailer → Consumer
Channel III: Producer → Wholesaler → Retailer → Consumer
Channel IV: Producer → Distributer → Retailer → Consumer

Among the four identified marketing channels, Channels I, II and III were commonly observed across all selected grape wine-processing industries. The aggregate marketing costs computed for these 14 sampled industries are presented in table 1.

Table1: Overall channel-wise marketing cost for selected grape wine industries

Sr. No.	Particulars	Marketing Channels					
		I		II		III	
		Cost Rs/Litre	Profit Margin (Rs)	Cost Rs/Litre	Profit Margin (Rs)	Cost Rs/Litre	Profit Margin (Rs)
1.	**a) Producer Margin** • Production Cost • Marketing Cost incurred by the Producer • Producer's Total Cost • Producer's Sales Price	377.50 123.93 501.43 649.29	147.86 (100)	377.50 107.50 485.00 610.36	125.36 (58.02)	377.50 91.43 468.93 572.86	103.93 (46.41)
2.	**b) Wholesaler Margin** • Wholesaler's Purchase Price • Cost incurred by the Wholesaler • Wholesaler's Total Cost • Wholesaler's Sale Price	-	-	-	-	572.86 38.93 611.79 656.79	45.00 (20.10)
3.	**c) Retailer Margin** • Retailer's Purchase Price • Cost incurred by the Retailer • Retailer's Total Cost • Retailer's Sale Price	-	-	610.36 66.78 677.14 767.86	90.72 (41.98)	656.79 52.14 708.93 783.93	75.00 (33.49)

4.	d) Consumer's Purchase Price	649.29		767.86		783.93	
5.	e) Producer's Share in Consumer (%)	(100.00)		(79.49)		(73.07)	

Figures in the parenthesis are in percentage

The results indicate that the producer's profit margin was highest in Channel I at Rs. 147.46 per litre, followed by Rs. 125.36 per litre in Channel II and Rs. 103.93 per litre in Channel III. In percentage terms, the corresponding profit margins were 100.00 percent, 58.02 percent and 46.41 percent, respectively. All sampled units were farmers' producer grape wine industries.

The findings reveal that marketing channels with fewer intermediaries generate higher profit margins for producers. Channel I was more profitable than Channels II and III due to lower marketing costs associated with reduced intermediary involvement. As the number of middlemen increases, additional expenses related to storage, packaging, transportation, loading and unloading raise overall marketing costs, thereby reducing the profit margins realized by farmers.

Table 2: Channel-wise marketing efficiency for marketing of grape wine

Sr. No.	Particulars	Unit	Marketing Channel		
			I	II	III
1.	Retailer's Sale Price or Consumer's Purchase Price	Rs/litre	649.29	767.86	783.93
2.	Total Marketing Cost	Rs/litre	123.93	174.28	182.50
3.	Total Net Margins of Intermediaries	Rs/litre	0	90.72	120
4.	Net Price Received by Producers (Gross Price Received - Producer's Marketing cost)	Rs/litre	525.36	660.36	692.50
5.	Value Added: (1 - 4)	Rs/litre	123.93	107.50	91.43
6.	Conventional Method: 5 / 2	Ratio	1	0.62	0.50
7.	Shepherd's Method: 1 / 2	Ratio	5.24	4.41	4.30
8.	Acharya's Method: 4 / (2 + 3)	Ratio	4.24	2.49	2.29

The table 2 presents the channel-wise marketing efficiency of grape wine estimated using different analytical methods. According to both the Conventional method and Shepherd's method, Channel I recorded marketing efficiency values of 1.00 and 5.24, respectively, indicating superior efficiency compared to Channels II and III in generating higher returns for producers. Similarly, estimates based on Acharya's method revealed that Channel I was the most efficient, with a marketing efficiency of 4.24, followed by Channel II (2.49) and Channel III (2.29).

Results obtained using Shepherd's method further confirm that Channel I, representing direct marketing from producer to consumer, exhibited the highest efficiency (5.24), surpassing Channel II (4.41) and Channel III (4.30). These findings demonstrate that a reduction in the number of intermediaries enhances marketing efficiency and increases returns to producers. Overall, Channel I emerged as the most effective marketing channel, providing the highest economic benefits to grape wine producers.

Channel wise marketing cost and marketing efficiency of Grape Raisins:

Five districts namely Nashik, Sangli, Pune, Solapur and Ahmednagar were selected for the collection of primary data on marketing costs incurred by various intermediaries involved in the marketing of grape raisin products. A total of 66 grape raisin-processing industries were operating across these districts, of which 39 were farmer's producer grape raisin industries. From this group, approximately 50 percent of the farmer's producer units, comprising 19 grape raisin-processing industries, were selected as the sample for the study.

Industry-wise primary data on marketing costs were collected from the selected units. In addition, information pertaining to the marketing channels adopted by these industries for the distribution of grape raisins was gathered. The following marketing channels were identified and analyzed during the course of the study.

Channel I: Producer → Consumer
Channel II: Producer → Retailer → Consumer
Channel III: Producer → Wholesaler → Retailer → Consumer
Channel IV: Producer → Distributer → Retailer → Consumer

Among the four identified marketing channels, Channels I, II and III were commonly observed across all selected grape raisin-processing industries. The overall marketing costs estimated for the 19 sampled industries are presented in table 3.

Table 3: Overall channel-wise marketing cost for selected grape raisin industries

Sr. No.	Particulars	Marketing Channels					
		I		II		III	
		Cost Rs/Kg	Profit Margin (Rs)	Cost Rs/Kg	Profit Margin (Rs)	Cost Rs/Kg	Profit Margin (Rs)
1.	**a) Producer Margin** • Production Cost • Marketing Cost incurred by the Producer • Producer's Total Cost • Producer's Sales Price	 103.37 20.63 124.00 159.21	 35.21 (100)	 103.37 17.15 120.52 147.89	 27.37 (57.78)	 103.37 15.00 118.37 142.50	 23.13 (40.81)
2.	**b) Wholesaler Margin**	-	-	-	-		13.44

	• Wholesaler's Purchase Price • Cost incurred by the Wholesaler • Wholesaler's Total Cost • Wholesaler's Sale Price					142.50 9.69 152.19 165.63	(22.73)
3.	**c) Retailer Margin** • Retailer's Purchase Price • Cost incurred by the Retailer • Retailer's Total Cost • Retailer's Sale Price	-	-	147.89 13.42 161.31 181.31	20.00 (42.22)	165.62 12.19 177.81 199.37	21.56 (36.46)
4.	d) Consumer's Purchase Price	159.21		181.31		199.37	
5.	e) Producer's Share in Consumer (%)	(100.00)		(81.57)		(71.47)	

Figures in the parenthesis are in percentage

The results presented in table 3 indicate that the producer's profit margin was highest in Channel I at Rs. 35.21 per kg, followed by Rs. 27.37 per kg in Channel II and Rs. 24.13 per kg in Channel III. In percentage terms, the corresponding profit margins were 100.00 percent, 57.78 percent and 40.81 percent for Channels I, II and III, respectively. All sampled units were farmer's producer grape raisin industries. These findings suggest that an increase in the number of intermediaries leads to higher marketing costs, as additional expenses are incurred for storage, packaging, transportation, loading and unloading. Consequently, the involvement of more middlemen reduces the profit margins realized by the producers.

Table 4: Channel-wise marketing efficiency for marketing of grape raisins

Sr. No.	Particulars	Unit	Marketing Channel		
			I	II	III
1.	Retailer's Sale Price or Consumer's Purchase Price	Rs/kg	159.21	181.31	199.37
2.	Total Marketing Cost	Rs/kg	20.63	30.57	36.88
3.	Total Net Margins of Intermediaries	Rs/kg	0	20.00	35.00
4.	Net Price Received by Producers (Gross Price Received - Producer's Marketing cost)	Rs/kg	138.58	164.16	184.37
5.	Value Added: (1 - 4)	Rs/kg	20.63	17.15	15.00
6.	Conventional Method: 5 / 2	Ratio	1	0.56	0.41
7.	Shepherd's Method: 1 / 2	Ratio	7.72	5.93	5.41
8.	Acharya's Method: 4 / (2 + 3)	Ratio	6.72	3.25	2.56

The table 4 presents the channel-wise marketing efficiency of grape raisins estimated using three different methods. According to both the Conventional method and Shepherd's method, Channel I exhibited the highest marketing efficiency, with values of 1.00 and 7.72, respectively, indicating greater efficiency in generating returns for producers compared to Channels II and III. Similarly, estimates based on Acharya's method showed that Channel I was the most efficient, with a marketing efficiency of 6.72, while Channels II and III recorded efficiencies of 3.25 and 2.56, respectively.

Overall, the results from tables 1 and 3 indicate that a reduction in the number of intermediaries in the marketing of grape processed products is associated with higher profit margins for producers. As the number of middlemen increases, marketing costs rise due to additional expenses for storage, packaging, transportation, loading and unloading, which in turn reduce the returns realized by farmers.

Conclusions

The distribution of processed grape products occurs through three main marketing channels i.e. Producer → Consumer (Channel I), Producer → Retailer → Consumer (Channel II) and Producer → Wholesaler → Retailer → Consumer (Channel III).

The results indicate that Channel I, representing direct marketing from producer to consumer, yielded the highest profit margins for both grape wine and grape raisins. This outcome is attributed to the reduced number of intermediaries, which allows producers to retain a larger share of the returns compared to Channels II and III. Channel I also demonstrated higher marketing efficiency, as measured by both the Conventional and Shepherd methods, confirming its superior effectiveness in generating returns for producers.

These findings highlight an inverse relationship between the number of intermediaries and producer's profit margins. As the number of middlemen increases, marketing costs rise due to additional expenses associated with storage, packaging, transportation, loading and unloading, which subsequently reduce the returns to farmers. Overall, the study demonstrates that minimizing the number of intermediaries in the distribution of processed grape products enhances both profitability and marketing efficiency for producers.

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