



A study on Marketing Channels and Efficiency, and Factors Influencing the Selection of Marketing Channels by the Pomegranate Growers in Karnataka

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Karnataka is the third largest producer of pomegranate in India. Pomegranate holds 6th position in overall fruit production with share of 4.5% next to Papaya (6%) in the state of Karnataka during 2019-20. Chitradurga and Tumkur districts were selected based on the major pomegranate cultivating areas in South Karnataka. This study was proposed to identify the marketing channels and its efficiency, and factors influencing the selection of marketing channels by the pomegranate growers in Karnataka. From the selected pomegranate producing districts, four taluks were selected for the study, i.e., Hiriyyur and Hosadurga taluks from Chitradurga district, Sira and Pavagada taluks from Tumkur district. From each taluk 30 sample respondents were selected, a total of 120 sample

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respondents were selected randomly for the study. In addition a sample of 40 market intermediaries were selected, i.e., pre-harvest contractors, commission agents cum wholesalers, wholesalers, and retailers from each 10 respondents were selected, to workout marketing cost and marketing margins for pomegranate. Based on the study findings, three different marketing channels were prominently followed by the pomegranate growers in the selected districts. Channel I: Producer → Pre-harvest contractor → Commission agent cum wholesaler → Retailer → Consumer, Channel II: Producer → Commission agent cum wholesaler → Retailer → Consumer and Channel III: Producer → Wholesaler → Retailer → Consumer. The study also revealed that 59.2% of the sample respondents followed channel I, 26.7%, followed channel II and 14.2% followed channel III. Further, it was found out that, channel I has low marketing efficiency i.e., 1.412, compared to Channel II (1.542) and channel III (1.932). The Channel III has more efficiency (1.932) because the total marketing cost incurred in the channel III was low i.e., ₹. 2258.7 per quintal, compared to channel I (₹. 2914.26 per quintal), and channel II (₹. 3067.5 per quintal). The results on the factors influencing the selection of marketing channels by the pomegranate growers was analyzed by using the relative importance index. The findings revealed that factors influencing to select channel I are high price fluctuations in the market, distant market, high transportation cost, ease of selling at the farm gate, and non-availability of storage and warehouse facilities, are relatively more important factors. The study also concluded that factors influencing to select channel II and channel III in the study area are availing market regulated prices, bulk sales, availing better rates or prices, timely payment, and price fixation by APMC are relatively more important factors. Profit maximization and searching for fruit exporters and bulk buyers is the main intention to choose channel II and channel III by the pomegranate growers. By considering all aspects, it is concluded that majority of the sample respondents preferred to sell their produce through channel I because the ease of selling the produce at the farm gate, and to reduce the risk of transportation, storage etc.

Keywords: Marketing channel; factors influencing; marketing efficiency; price spread.

1. INTRODUCTION

Horticulture has emerged as an essential part of agriculture, contributing significantly to the total agricultural production of the country. It is one of the fastest growing and export oriented sectors with in the agricultural sector. India has diverse soil and varied agro-climatic conditions, i.e., temperate to tropical which offers tremendous potential for the development of a wide variety of horticultural crops. India is the second largest producer of horticultural crops in the world, after China. It is the second largest producer of fruits and vegetables globally, after China. India is the world's largest producer of pomegranate and it can be grown in tropical and subtropical regions [1]. Pomegranate (*Punica granatum L.*) is one of the oldest fruit, and belongs to the family Punicaceae. Pomegranate is the important commercial fruit crop in India. Pomegranate fruit is well known for its health benefits, cooling nature, refreshing juice, and medicinal properties. Pomegranates are rich in anti-oxidant, anti-viral, and anti-tumor properties. It is good source of vitamins, especially vitamin A, vitamin C, and vitamin D, as well as folic acid.

In India, pomegranate production has steadily increased over the last decade. Maharashtra is

popularly known as the 'fruit bowl' of India. Maharashtra stands first place in the production of pomegranate followed by Gujarat and Karnataka. Karnataka contributes nearly 10.06% of the overall pomegranate production in India during 2019-20. Pomegranate is majorly produced in Chitradurga, Ballari, Vijayapura, Tumkur, Bagalkote, Raichur, Koppal and Belagavi districts of Karnataka. These districts contributed about 87.72% of the total area under pomegranate in the state during 2019 – 20. Pomegranate holds 6th position in overall fruit production with share of 4.5% next to Papaya (6%) in the state of Karnataka during 2019-20 [2].

In the production of pomegranates, marketing plays an essential role. It is the final stage, where the producer turns all of his hard work and other inputs used into notes. The major wholesale markets in Karnataka are Binny Mills (F&V) Bangalore, Davangere, Gulbarga, Mangalore, Mysore, Udupi, and Kolar. During the marketing of the produce, selecting an appropriate marketing channel plays a crucial role. The primary function of the marketing channels is to make products available at the right time, at right place and in right quantity/amount. The marketing channels forms a supply chain and it is

linked to the producer, pre-harvest contractor, commission agent cum wholesaler, wholesaler, retailer, and consumers. Various marketing channels are involved in the marketing of the pomegranate. Therefore, an effort has been made in the Chitradurga and Tumkur Districts of Karnataka with the following specific objectives:

1. To study the major marketing channels and efficiency in the marketing of pomegranate.
2. To study the factors influencing the selection of marketing channel by pomegranate growers.

2. REVIEW OF LITERATURE

Ravikumar et al., [3] conducted study on resource use efficiency and marketing channels for pomegranate in Chitradurga district of Karnataka, India – an economic analysis. The study identified two marketing channels in the study area, i.e., Channel 1- producer to pre-harvest contractor, and channel 2 – producers brought their produce to distant wholesale market and sold to retailer through a commission agent cum wholesalers. The results revealed that majority of the growers sold their produce through channel I, i.e., to pre-harvest contractor.

Devendra Singh, et al., [4] studied different marketing channels and its efficiency in the marketing of pomegranate in Himachal Pradesh. In this study they identified 5 different marketing channels for pomegranates. They observed the highest efficiency for channel-A (Producer-consumer) i.e., 271.73, but volume transacted through this channel was very low, i.e., 5%, and high quality produce was traded through channel A. The producer's share in consumer rupee was calculated for different marketing channels, which was varied from 99.63% to 70.00% in channel A to Channel B, implying that channel - A is most efficient.

Rede and Bhattacharyya [5], conducted a study about the various marketing channels in the Solapur District of Maharashtra. The pomegranate produced in the study area was marketed through three different marketing channels from producers to the end consumers, viz., Channel- I: Farmer- Pre-harvest contractor - Commission agent cum wholesaler - Retailer - Consumer, Channel-II: Farmer- Distant Market wholesaler - Retailer – Consumer and Channel-III: Farmer – Exporter. They identified that channel I as the most popular channel for

marketing of pomegranates in the study area. The net price received by the producer was higher in channel I when compared to the Channel II and Channel III.

Thamthanakoon [6] conducted a study about factors affecting the marketing channel selection by rice farmers in Thailand. The study categorized the factors into 4 groups, which are socio-demographic, transaction specific variables, relationship dynamic variables, and other variables. The study found that past behaviour, attitude, subjective norms, farmers' authority, and consideration of transaction specific cost had a direct impact on intention, and channel accessibility's impact on intention was indirectly caused by past behaviour. The findings highlight the significance of these aspects in comprehending rice farmers during the selection of marketing channels and may have potential implications for various stakeholders, including policymakers, farmers, and rice buyers.

Endri et al., [7], studied factors affecting vegetable producers market outlet choice in case of Habru district, North Wollo Zone, Ethiopia. The study resulted that, selection of market outlets by the onion growers being strongly influenced by the factors like age, education, gender, farming experience, cultivated land, quantity produced, selling price, and extension contact. Factors like education level, gender, farming experience, quantity produced, selling price, extension contact, and non/off-farm income were strongly influenced by the tomato producers during the selection of market outlet. This study suggests to promote producers' organization to provide financial assistance for marketing, collective marketing to increase vegetable production, and promoting market-oriented extension services.

Ain Syakirin and Nabila Huda [8], conducted a study about a review on the factors that affecting the selection of marketing channels among the small-scale farmers. The study categorized key factors influencing the selection of marketing channels into producer's related, product related, farm related and market related factors. The findings resulted that marketing related factors was the dominant factor that influences the selection of marketing channel.

3. METHODOLOGY

Data for the present study was collected from major pomegranate growing areas in South Karnataka i.e., Chitraduraga and Tumkur

districts. From selected district, four taluks were selected based on the large scale cultivation of pomegranate, i.e., Hiriyur and Hosadurga taluks from Chitradurga district, Sira and Pavagada taluks from Tumkur district, were selected purposively. From each taluk 30 sample respondents were selected, a total of 120 sample respondents were selected randomly for the study. In addition a sample of 40 market intermediaries were selected, i.e., pre-harvest contractors, commission agents cum wholesalers, wholesalers, and retailers from each 10 respondents were selected, to work out marketing cost and marketing margins for different marketing channels of pomegranate. The primary data was collected from the sample respondents by survey method and interview method.

Marketing cost

$$MC = C_F + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mi}$$

Where,

MC = Marketing cost,
 C_F = Cost incurred by Producer,
 C_{mi} = Cost incurred by the i^{th} middleman

Marketing Margin

$$A_{mi} = P_{Ri} - (P_{Pi} + C_{mi})$$

Where,

A_{mi} = Absolute marketing margin of i^{th} middleman,
 P_{Ri} = Total value of receipts per unit (sale price)
 P_{Pi} = Purchase value of goods per unit (purchase price)
 C_{mi} = Cost incurred on marketing per unit.

Price Spread

Price spread: Consumer's price – price received by farmer

Producer's Share in Consumers Rupee

$$F_s = (F_p \div C_p) \times 100$$

Where,

F_s = Producer's share in consumers rupee
 F_p = Price received by the producer
 C_p = Price paid by the consumer

Marketing efficiency

a) Acharya Approach

$$MME = \frac{FP}{MC+MM}$$

Where,

MME= Modified measure of marketing efficiency
 FP = Net price received by the farmer
 MC = Total marketing cost
 MM = Net marketing margin
 RP = Price paid by the consumer

b) Shepherd's Formula

$$\text{Marketing Efficiency} = \frac{\text{Value of goods sold (V)}}{\text{Total marketing cost plus margin (I)}}$$

Relative Important Index was analyzed by using formula

$$RII = (5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1) \div (A*N)$$

Where,

n_5 = number of sample respondents were strongly agree
 n_4 = number of sample respondents were agree
 n_3 = number of sample respondents were neutral
 n_2 = number of sample respondents were disagree
 n_1 = number of sample respondents were strongly disagree
 A = height weight = 5
 N = total sample size = 120

4. RESULTS AND DISCUSSION

4.1 Marketing Channels

In the production of pomegranates, marketing plays an essential role. Marketing channel consists of group of individuals, organizations, and agencies that facilitates the direct flow of goods and services from the hands of the producers to the ultimate consumers. The marketing channels forms a supply chain and it linked to the producers, pre-harvest contractors, commission agent cum wholesaler, wholesalers, retailers, and consumers. The length of the channel varies from commodity to commodity, and it depends on the nature and degree of specialization of the product and quantity to be moved for marketing.

The results of the study indicated that, the sample respondents preferred to sell their produce mainly through three major channels. They are

Channel I : Producer → Pre-harvest contractor
→ Commission agent cum wholesaler → Retailer
→ Consumer (Farm gate)
Channel II : Producer → Commission agent cum wholesaler → Retailer → Consumer (in market)
Channel III : Producer → Wholesaler → Retailer
→ Consumer (in market)

4.1.1 Selection of marketing channel by sample respondents

Among 120 sample respondents, about 71 (59.2%) respondents preferred to sell their produce to pre harvest contractor through channel I, and 32 (26.7%) respondents brought their produce to the distant/wholesale market and sell their produce to the commission agent cum wholesalers through channel II. About 17 (14.2%) respondents selected channel III, where producers brought their produce to the wholesale market and sold directly to the wholesaler without an involvement of the commission agents.

4.1.2 Marketing cost incurred by the pomegranate growers in Channel I, II and III (₹/ qt)

The producers sold their produce through different market intermediaries like pre-harvest contractor, commission agent cum wholesaler, wholesaler and retailer. The cost involved to carry out each marketing activity was taken into consideration to work out the marketing cost and margin for pomegranate. The marketing cost incurred by the pomegranate grower in channel II and channel III includes harvesting cost, grading charges, packaging material cost, loading and unloading charges, weighing charges, transportation charges, commission paid to the agents and miscellaneous charges. The details about the marketing cost incurred by the pomegranate grower is given in Table 2. The marketing cost incurred was varied from Ravikumar et al. [3], and Rede and Bhattacharya's findings, due to increasing prices to carry out the marketing activities.

The marketing cost incurred by the pomegranate grower in channel I was nil, because all the marketing cost such as harvesting cost, grading charges, packaging material charges,

transportation charges, loading, unloading, weighing, commission, and miscellaneous charges were carried out by the pre-harvest contractor. The total marketing cost incurred by the producer in Channel II was ₹ 1652.77 per quintal. The major marketing cost in channel II was incurred by commission charges (50.1%), followed by transportation charges (20.2%), packaging material charges (8.5%), harvesting cost (7.6%), grading charges (4.1%), and rest of the cost was incurred by miscellaneous charges, loading and unloading and weighing charges. The total marketing cost incurred by the pomegranate grower in channel III was ₹. 847.9 per quintal. The major marketing cost incurred by the pomegranate grower was transportation charge (40.2%), followed by packaging material cost (17.7%), harvesting cost (14.9%), grading charges (8.3%), the rest of the cost was incurred by miscellaneous charges, loading and unloading and weighing charges.

4.1.3 Marketing cost incurred by the pre-harvest contractor in Channel I (₹/qt)

The major marketing cost was incurred by the pre-harvest contractor was commission charges (46.4%) followed by transportation charges 20.5%, packing material charges (9.8%), harvesting cost (7.7%), and least cost was incurred by miscellaneous charges, loading, unloading and weighing charges. The total marketing cost incurred by the pre-harvest contractor was ₹. 1638.1 per quintal. The details about marketing cost incurred by the pre-harvest contractor was mentioned in Table 3 [5].

4.1.4 Marketing cost incurred by commission agent cum wholesaler in Channel I and II (₹/qt)

The marketing cost incurred by the commission agent cum wholesaler is presented in the Table 4. The total marketing cost incurred by the commission agent was ₹. 487.66 per quintal, in channel I. The major marketing cost incurred by commission agent cum wholesaler in Channel I is storage loss (49.2%) followed by labour cost (26.7%), miscellaneous charges (10.8%), shop rent (9.9%) and license charge (3.4%). The total marketing cost incurred by the commission agent cum wholesaler in channel II was ₹. 552.8 per quintal, the major marketing cost incurred was storage loss (49.9%) followed by labour cost (25.3%), miscellaneous charges (13.7%), shop rent (8.4%) and license fee (2.7%).

Table 1. Preference of marketing channel by pomegranate growers in the selected area

Marketing Channel followed	No. of Respondents	Percentage analysis
Channel I :- Producer - Pre-harvest contractor – Commission agent cum wholesaler - Retailer – Consumer (Farm gate)	71	59.2%
Channel II :- Producer - Commission agent cum wholesaler - Retailer – Consumer (Market)	32	26.7%
Channel III :- Producer- Wholesaler - Retailer – Consumer (Market)	17	14.2%
Total	120	100.0%

Table 2. Marketing cost incurred by the pomegranate growers in channel I, II and III in the study area (₹/qt)

Particulars	Channel I	Percentage	Channel II	Percentage	Channel III	Percentage
Harvesting cost	-	-	126.3	7.6	126.3	14.9
Grading Charges			67.17	4.1	70.5	8.3
Packaging Material charges			140	8.5	150	17.7
Loading charges			50	3.0	50	5.9
Transportation charges			334.3	20.2	341.1	40.2
Unloading Charges			30	1.8	30	3.5
Weighing Charges			25	1.5	25	2.9
Commission charges			828	50.1	-	-
Miscellaneous charges			52	3.1	55	6.5
Total	-	-	1652.77	100.0	847.9	100.0

Table 3. Marketing cost incurred by pre-harvest contractor in channel I (₹/qt)

Particulars	Amount	Percentage
Harvesting Cost	126.3	7.7
Grading Charges	71.3	4.4
Packaging material charges	160	9.8
Loading Charges	50	3.1
Transportation charges	335.5	20.5
Unloading charges	30	1.8
weighing charges	25	1.5
Commission charges	760	46.4
Miscellaneous charges	80	4.9
Total	1638.1	100.0

Table 4. Marketing cost incurred by commission agent cum wholesaler in Channel I and II (₹/qt)

Particulars	Channel I		Channel II	
	Amount	Percentage	Amount	Percentage
Labour cost	130	26.7%	140	25.3%
storage loss(2% on produce)	240	49.2%	276	49.9%
License charge	16.66	3.4%	14.8	2.7%
Shop rent	48.5	9.9%	46.5	8.4%
Miscellaneous charges	52.5	10.8%	75.5	13.7%
Total	487.66	100.0%	552.8	100.0%

4.1.5 Marketing cost incurred by the wholesaler in Channel III (₹/qt)

The marketing cost incurred by the wholesaler in the distant market is presented in Table 5. The major marketing cost is incurred by the storage loss (47.6%) followed by labour cost (30%), miscellaneous charges (10.3%), shop rent (9.3%) and license charge (2.8%). The total marketing cost incurred by the wholesaler in channel III was ₹. 566.8 per quintal.

4.1.6 Marketing cost incurred by the retailer in channel I, II and III (₹/qt)

The marketing cost incurred by the retailers is presented in the Table 6. The total marketing cost incurred by the retailer was high in channel II ₹. 862 per quintal, followed by channel III (₹. 844 per quintal) and channel I (₹. 788.5 per quintal). About 75% of the marketing cost in the

three channels was incurred by storage loss followed by transportation charges, and remaining 25% of the marketing cost was incurred by miscellaneous charges, loading charges municipality charges and unloading charges.

4.1.7 Marketing cost, margin, and price spread in Channel I, Channel II, Channel III (₹/qt)

The average price was taken to calculate the price spread. Table 7. showed that, the total marketing cost was high in channel II was ₹. 3067.5 per quintal, followed by channel I was ₹. 2914.26 per quintal and channel III was ₹. 2258.7 per quintal. The results revealed that channel III incurs less marketing cost, because less involvement of market intermediaries. In channel III, the producers brought their produce to the market and sell directly to the wholesaler without an involvement of commission agents.

Table 5. Marketing cost incurred by the wholesaler in Channel III (₹/qt)

Particulars	Amount	Percentage
Labour cost	170	30.0%
storage loss(2% on produce)	270	47.6%
License charge	15.8	2.8%
Shop rent	52.5	9.3%
Miscellaneous charges	58.5	10.3%
Total	566.8	100.0%

Table 6. Marketing cost incurred by the retailer in channel I, II and III (₹/qt)

Particulars	Channel I	Percentage	Channel II	Percentage	Channel III	Percentage
Loading charges	50	6.3%	40	4.6%	45	5.3%
Unloading charges	30	3.8%	35	4.1%	35	4.1%
Transportation Charges	240	30.4%	264	30.6%	240	28.4%
Municipality charges	50	6.3%	46.5	5.4%	48.5	5.7%
Storage loss(3% on produce)	360	45.7%	414	48.0%	405	48.0%
Miscellaneous charges	58.5	7.4%	62.5	7.3%	70.5	8.4%
Total	788.5	100.0%	862	100.0%	844	100.0%

Table 7. Price spread of pomegranate in channel – I, II, III (₹/qt)

Particulars	Channel I		Channel II		Channel III	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Price received by the farmer	12000	58.54%	13800	69.00%	13500	70.3%
Marketing cost incurred by the farmer	0	0.00%	1652.7	8.3%	847.9	4.42%
Net profit received by the farmer	12000	58.54%	12147.3	60.7%	12652.1	65.90%
Pre-harvest contractor						
Price received by the pre harvest contractor	15200	74.15%	-	-	-	-
Price paid by the pre harvest contractor	12000	58.54%	-	-	-	-
Marketing cost incurred	1638.1	7.99%	-	-	-	-
Margin	1561.9	7.62%	-	-	-	-
Commission agent cum wholesaler						
Price received by Commission agent cum wholesaler	17500	85.37%	16500	82.5%	-	-
Price paid by the commission agent cum wholesaler	15200	74.15%	13800	69.0%	-	-
Marketing cost incurred	487.66	2.38%	552.8	2.8%	-	-
Margin	1812.34	8.84%	2147.2	10.7%	-	-
Wholesaler						
Price received by wholesaler	-	-	-	-	16000	83.33%
Price paid by wholesaler	-	-	-	-	13500	70.31%
Marketing cost incurred	-	-	-	-	566.8	2.95%
Margin	-	-	-	-	1933.2	10.07%
Retailer						
Price received by the retailer	20500	100.00%	20000	100.0%	19200	100.00%

Particulars	Channel I		Channel II		Channel III	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Price paid by the retailer	17500	85.37%	16500	82.5%	16000	83.33%
Marketing Cost incurred	788.5	3.85%	862	4.3%	844	4.40%
Margin	2211.5	10.79%	2638	13.2%	2356	12.27%
Price paid by the consumer	20500	100.00%	20000	100.0%	19200	100.00%
Price spread	8500	41.46%	6200	31.0%	5700	29.69%
Total marketing cost	2914.26		3067.5		2258.7	
Total marketing margin	5585.74		4785.2		4289.2	
Producer share in consumers' Rupee (%)		58.54%		69.00%		70.31%

The details of the marketing margin for the intermediaries are presented in Table 7. The highest marketing margin was received by the intermediaries was in channel I ₹. 5585.74 per quintal followed by channel II was ₹. 4785.2 per quintal and in channel III was ₹. 4289.2 per quintal.

The net price received by the farmer was high in channel III in terms of consumer rupee, was about 65.9%, followed by channel II (60.7%), and channel I (58.54%).

The price spread was low in channel III, it was ₹ 5700 per quintal, because the pomegranate growers selling their produce directly to the wholesalers in the major market without any involvement of the contractors or commission agents. The price spread in channel II was comparatively high compared to channel I, i.e., ₹ 6200 per quintal. In channel I, the involvement of market intermediaries are more, so, the price spread recognized in channel I was very high, i.e., ₹. 8500 per quintal, compared to other channels.

By Shepherd’s Formula

Table 8. Marketing efficiency by Shepherd’s Formula

Channels	Price paid by the consumer(₹ per qt) (V)	MC	MM	MC+MM (I)	MME=(V/I)	Rank
Channel I	20500	2914.26	5585.74	8500	2.412	3
Channel II	20000	3067.5	4785.2	7852.7	2.547	2
Channel III	19200	2258.7	4289.2	6547.9	2.932	1

By Acharya Approach

Table 9. Marketing efficiency by Acharya Approach

Channels	Net price received by the Producer (₹per qt)	MC+MM	MME	Rank
Channel I	12000	8500	1.412	3
Channel II	12147.3	7852.7	1.547	2
Channel III	12652.1	6547.9	1.932	1

The results of marketing efficiency are given in Table 9 and 10 by [10] using Shepherd’s formula approach and Acharya Approach. From both the tables it was concluded that the marketing efficiency was higher in channel III, i.e., 2.932 and 1.932, because of the low marketing cost, hence lower the marketing cost, higher the efficiency given by Acharya [11]. In channel I and channel II, the marketing efficiency was low compared to channel III, i.e., 2.412 and 2.547 from Shepherds formula, and 1.412 and 1.547 from Acharya Approach. The channel III was having more efficiency, but only 14.2% of respondents were using this channel. Even though channel I was less efficient, most of the pomegranate growers were liked to sell their produce to the pre-harvest contractors, because the comfort of selling the produce at the farm gate, to avoid the risk of transportation, storage, and fluctuations in market price etc.

The producer share in consumers’ rupee was high in marketing channel III, i.e., 70.31%, followed by channel II (69.00%), and channel I (58.54%). The producers’ share in consumer rupee was less in channel I, due to the involvement of more market intermediaries. The results of the analysis illustrate that by avoiding one or more intermediaries, the producers can get a great profit share in terms of consumer rupee. Ravikumar et al., findings resulted that Producer share in consumers’ rupee was more in channel-I (i.e., Producer – Pre-harvest contractor) compared to channel – II (i.e., Producers – Commission agent cum wholesaler in distant market – retailer) due to the involvement of additional market intermediaries in channel – II.

4.2 Marketing Efficiency

Marketing efficiency is defined as ration of customer satisfaction (market output) to cost of production (marketing input), [9]. Marketing efficiency was analyzed by using two approaches, Shepherd’s formula approach and Acharya Approach.

5. FACTORS INFLUENCING THE SELECTION OF MARKETING CHANNELS BY THE POMEGRANATE GROWERS

In order to collect information regarding the factors influencing the selection of marketing channels by the pomegranate growers, a five point likert scale technique was used, and analyzed by using the Relative Importance Index (RII). The sample respondents were asked to indicate whether they strongly agree, agree, neutral, disagree and strongly disagree. For channel I separate factors were listed, and channel II and III, factors were listed separately.

5.1 Factors Influencing the Selection of Channel I by the Pomegranate Growers

From Table 1, it was concluded that about 59.2% of the sample respondents were interested to sell their produce to the pre-harvest contractors. The marketing cost incurred by the producer was nil, in channel I, because all marketing activities and it's cost was incurred by the pre-harvest contractors, this is the main reason for choosing the channel I, whereas in channel II and channel III, the pomegranate grower has to incur the marketing cost like harvesting cost, grading transportation cost, packaging etc.

The factors influencing the pomegranate growers to choose channel I were given in Table 11. From the result findings it was concluded that, the main factor influencing the pomegranate grower to choose channel I was high price

fluctuations in the market, followed by distant market, ease of selling the produce at farm gate, high transportation cost, non-availability of storage and warehouse facilities, high commission charges, high labour cost, non-availability of market information, non-availability of labour, APMC procures a limited quantity of the produce, payment insecurities, and yield per acre is more. Most of the pomegranate growers preferred to sell their produce through channel I because the ease of selling the produce at the farm gate, to avoid the risk of transportation, storage, and fluctuations in market price etc [12,13].

5.2 Factors Influencing the Selection of Channel II and Channel III by Pomegranate Growers

From Table 1. It was concluded that 26.7% of the respondents selected the channel II for selling their produce, whereas only 14.2% of the respondents selected channel III for selling their produce.

The factors influencing the selection of channel II and channel III by the pomegranate grower were listed in Table 11. It was concluded that, the main factor influencing the pomegranate grower to channel II and channel III was receiving market regulated price, sell the produce in bulk, availing better rates or prices, timely payment, price fixation by the APMC, and directly sell the produce to the retailers or consumers. Profit maximization and searching for fruit exporters and bulk buyers was the main intention to choose channel II and channel III by the pomegranate growers.

Table 10. Factors influencing the pomegranate growers to select the Channel I

Sl. No	Particulars	RII value	Rank
1	Price fluctuations in the market is high	0.938	1
2	Distance of the market is more	0.927	2
3	Selling at the farm gate	0.901	3
4	High transportation cost	0.887	4
5	Non availability of storage and warehouse facilities	0.851	5
6	High commission charges	0.848	6
7	High labour cost	0.825	7
8	Non availability of market information	0.777	8
9	Non availability of labour	0.713	9
10	APMC procures a limited quantity of the produce	0.685	10
11	Payment insecurities	0.642	11
12	Yield per acre is more	0.623	12

Table 11. Factors influencing the pomegranate growers to select channel II and channel III

Sl. No	Particulars	RII value	Rank
1	Market regulated prices	0.857	1
2	Bulk sale	0.845	2
3	Availing better rates	0.829	3
4	Timely payment	0.820	4
5	Price range decided by APMC	0.812	5
6	Directly sell the produce to Retailers/Consumers	0.750	6

6. CONCLUSION

The study on marketing channel and efficiency, and factor influencing the selection of marketing channel by the pomegranate growers concluded that 59.2% of pomegranate growers depends on channel I, followed by channel II (26.7%), and channel III (14.2%). Even though the producer's share in consumer rupee was less in channel I, most of the farmers preferred to sell their produce to the pre-harvest contractors, because all the marketing activities carried by the pre-harvest contractors, the comfort of selling the produce at the farm gate, to avoid the risk of transportation, storage, and fluctuations in market price etc.. The main factors influencing the pomegranate growers to select channel I were price fluctuations, followed by high transportation cost, no commission charges, selling the produce at farm gate, shortage of labour for harvesting, packaging, grading etc. The main factors influencing the pomegranate growers to choose channel II and III are availing market regulated prices, selling their produce in bulk, producer will get better price for their produce, on spot payment etc. The Channel III is most effective marketing channel with efficiency of 1.932, because total marketing cost was lower, lower the marketing cost, higher the efficiency. If APMC market or Farmer producer organizations in the study area start to procure the pomegranate from the growers in large quantity then pomegranate growers themselves may transport their produce to nearby markets, which will help the producers to realize more profits by reducing the marketing margin. It has been noticed that the marketing cost incurred by the pomegranate grower was high, thus, there is a need to encourage the farmer producer organizations, institutions and agencies that can provide the financial support to the pomegranate growers to market their produce themselves. The minimum price of the produce should be based on the cost of production of the pomegranate maximum price should be based on the demand and quality of the pomegranate rather than the current wholesale market price.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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