

# An Economic Analysis of Market Power and Marketing Channel of Papaya in Jaipur City of Rajasthan

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## ABSTRACT

In view of this the present study was undertaken by collecting monthly wholesale prices of papaya in Jaipur city of Rajasthan. Muhana *mandi* – the largest fruit and vegetable wholesale markets situated in the Jaipur city of Rajasthan, was selected for the purpose of study. This study was based on the primary data which were collected by personal interview of these selected wholesaler cum-commission agents, retailers and processors using pre-tested schedules designed specifically for the purpose. In the results the market power was measured by two indices namely concentration ratio (CR) and Herfindahl-Hirschman index (HHI). Major marketing channels in the transportation of Papaya from *mandi* wholesaler to the consumer were identified. The results shows that the four and eight firm concentration ratio is 20.41 and 40.48, respectively whereas, HHI values for four and eight firm are 104.16 and 204.95 which implies that market is in perfect competition. Among the selected channels, major quantity of papaya moved through channel-I and minor quantity was moved through channel-II in the study area.

**Keywords:** Market power, Marketing channels, Concentration ratio, HHI

Horticulture crops cover large varieties of fruits and vegetables, flowers, plantation/spice crops, medicinal and aromatic plants, roots and tuber crops. The area under horticulture grew by about 3.2 per cent per annum and annual production increased by 5.42 per cent. Production of horticulture crops was about 305.40 million tons during 2016-17. India is the world's second largest producer of fruits next to China and occupied an area of 6.48 million hectares with a production of 92.846 million tons. Brazil stand out as the world's largest producer, supplying 27

per cent of the world demand, followed by Mexico at 14 per cent, Nigeria at 13.2 per cent and India and Indonesia at 9 per cent each during year 2016-17.

Papaya occupied an area of 1.36 lakh hectare with a production of 6.11 million tons in India. Rajasthan occupied an area of 720 hectare with a production of 10750 tons in Rajasthan. In India, major papaya

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growing states are Andhra Pradesh, Gujrat, Karnataka, Madhya Pradesh and West Bengal.

The production of papaya shown in 2008-09 was 2909 MT which increased to 6107.80 MT in 2017 indicating that there is wide scope of papaya processing industry in India. In Rajasthan the papaya production is very low (10.75 MT). This low production shows that there is less scope of papaya processing in Rajasthan so that papaya is processed only in form of Papaya Shake and Juice. Because of this reason in Rajasthan, papaya imports from other states for marketing and processing. The number of food processing unit in every state in which Andhra Pradesh ranks 1<sup>st</sup> with 9359 units due to the availability of resources in the state whereas Rajasthan has 777 units and ranks 26<sup>th</sup>. In Rajasthan papaya is processed only in Shake and Juice form.

Fresh fruits have some peculiarities that can make the exertion of market power easier, especially on the supply side. One basic and vital condition for the efficiency of an economy is the equality of the marginal cost and the output price. Under perfect competition, all firms are price takers and therefore no firm has the ability to set prices. On the other hand, under conditions of oligopoly, firms are price makers and they have the ability to set price above marginal cost.

Fresh produce prices are highly seasonal and volatile, depending on weather conditions. Sellers are usually accused of using their market power to lower producer prices excessively under bad demand conditions. Conversely, under favorable demand conditions, they are accused of increasing prices excessively. (Requillart *et al.* 2007). Where competitive intensity has fallen and market power has increased, theory suggests that output levels should be lower than they otherwise would have been, and prices should be higher than they otherwise would have been. Cowan (2017) identifies that to understand whether falling competitive intensity (or its counterpart, increasing market power) has resulted in reduced output and higher prices requires an understanding of the output and prices that would have been seen in the absence of an increase in market power. Concentration is a way to quantify the structure of a market. It can be a useful tool both for considering the likely effects of a specific conduct or merger, or for considering

the effectiveness of competition policy as a whole in protecting and facilitating competition across the economy.

Marketing of fruits involves a number of intermediaries performing various functions before it reaches to the hands of ultimate consumers. The intermediaries add to the cost of marketing and also receive a major share of processor's / consumer's prices as their margins. In agricultural markets, episodes of extreme price fluctuation are not uncommon. These may differ significantly amongst products and markets. Our study is based on the behavior of market power within the distribution chain of perishable agricultural products, taking dynamics and price fluctuation into account.

There is a large body of research that attempts to explain price as outcome of repeated interactions among firms. Price is a matter of vital importance to the seller and the buyer as well as the trader in a market place. In a competitive market economy, price is determined by free play of supply and demand. If competitive and remunerative prices are paid to the farmers, it acts as an adequate incentive for further production. Some studies concerning produce price determination explicitly consider the extreme perishability of fresh farm products (Sexton and Zhang, 2001).

## Objectives

This study was devoted to discussion of substantive results, followed by economic interpretations and analytical inferences. This study has been deal with the estimation and interpretation of the market power and marketing channels of Papaya.

## Research Methodology

The study was purposively confined to the state of Rajasthan and papaya crop was selected for the detailed study. Muhana *mandi* in Jaipur city of Rajasthan was selected purposively for the study because it is the largest fruit and vegetable wholesale market of the state. There were 20 wholesaler cum-commission agents of papaya at Muhana *mandi*. List of all the papaya wholesalers of Muhana *mandi* was prepared and considered for in-depth study. 30 retailers were selected using stratified random sampling. Three strata were

prepared that is within Lalkothi *mandi*, cart holders and shops from various colonies. 10 retailers from each category were selected. Lists of retailers were taken from wholesaler's office and five processors (juice makers) were selected to study the processing cost and margin of the papaya. Only primary data was collected to arrive at the stated objectives. Primary data were collected by personal interview of the selected wholesaler cum-commission agents, retailers and processors using pre-tested schedules designed specifically for the purpose.

## Analysis of data

### Market power

Market power is the environment in which the firm operates. It includes the following elements: buyers/sellers concentration, product/service differentiation, and entry barriers (Pomeroy and Trinidad, 1995). It is defined as the characteristics of the organization of a market, which seem to influence, strategically, the nature of competition and pricing behavior within the market. One of the important indicators of the efficient functioning of the market is the existence or absence of competition in the market. Perfect competition is measured as an inter relationship between market power in two or more firms. This explains that market is competitive.

### Concentration ratio

Market concentration is defined as the number and size distribution of sellers and buyers in the market.

The commonly used measure of market power, or seller concentration, is given by the proportion of total industry sales accounted for by the four large enterprises in the industry. (Kohls and Uhl 1985) suggested that, as a rule of thumb, a four enterprise concentration ratios of 50 per cent or more is indicative of strongly oligopolistic industry, of 33-50 per cent a weak oligopoly, and less than that, an un-concentrated industry. This is the number and size distribution of sellers and buyers in the market. The usual measures of market concentration are:

$$S_i = \frac{v_i}{\sum v_i} \quad \dots(1)$$

Where,

$S_i$  -market share of buyer  $i$

$V_i$  - amount of product handled by buyer  $i$

$\sum V_i$  = Total amount of product handle

$$C = \sum_{i=1}^r S_i \quad i = 1, 2, 3, 4 \quad \dots(2)$$

Where

$C$  - Concentration ratio

$S_i$  - percentage share of the  $i^{\text{th}}$  firm

$r$  - is the number of relatively larger firms for which the ratio is going to be calculated

### Herfindahl index

The *Herfindahl index* is a measure of the size of firms in relation to the industry and an indicator of the amount of competition among them. It is named after economists *Orris C. Herfindahl* and *Albert O. Hirschman* i.e. it is also known as *Herfindahl-Hirschman Index*, or *HHI*. Increases in the Herfindahl index generally indicate a decrease in competition and an increase of market power, whereas decreases indicate the opposite.

The Herfindahl index is calculated from the following formula:

$$H = \sum_{i=1}^r S_i^2$$

Where,  $S_i$  is the market share of firm  $i^{\text{th}}$  in the market and  $N$  is the number of firms.

The Herfindahl Index (HHI) ranges from  $1/N$  to one, where  $N$  is the number of firms in the market.

### Range

- (i) A HHI below 0.01 (or 100) indicates a highly competitive index.
- (ii) A HHI below 0.15 (or 1,500) indicates an unconcentrated index.
- (iii) A HHI between 0.15 to 0.25 (or 1,500 to 2,500) indicates moderate concentration.
- (iv) A HHI above 0.25 (above 2,500) indicates high concentration.

### Marketing Channels

The chain of intermediaries through which the

various farm commodities pass between producers and consumers is called marketing channels. Major marketing channels in the transportation of Papaya from *mandi* wholesaler to the consumer were identified. The volume of transaction through each channel was estimated to calculate the costs and margins and effectiveness of each channel.

## RESULTS AND DISCUSSION

This section is devoted to discussion of substantive results of the study, followed by economic interpretations and analytical inferences. The whole section has been divided into two sections. Section one deals with the estimation and interpretation of market power in marketing of papaya in selected market. In section two marketing channels of papaya marketing and processing was analyzed and interpreted.

### Market Power of Papaya Wholesalers:

The market power is measured by two indices namely concentration ratio (CR) and Herfindahl-Hirschman Index (HHI). The present study undertook on papaya wholesalers of Muhana *mandi* of Jaipur city. On the basis of concentration, market is categorized in no (0 %), low (0-40 %), medium (40-70 %), high (70-100 %) and total concentration (100%). On the basis of HHI, market is categorized in un-concentrated (<1500), moderately (1500-2500) and highly concentrated (>2500).

**Table 1:** The four and eight firm's concentration ratio and HHI

Firm	CR (%)	Cumulative CR	HHI	Cumulative HHI
1	5.31		28.21	
2	5.04	10.35	25.39	53.60
3	5.03	15.38	25.29	78.89
4	5.03	20.41	25.27	104.16
5	5.02	25.43	25.20	129.36
6	5.02	30.45	25.23	154.59
7	5.01	35.47	25.18	179.78
8	5.02	40.48	25.16	204.95
Four Firm (1 to 4)	20.41		104.16	
Eight firm (1 to 8)	40.48		204.95	

The data presented in table 1 shows that the four and eight firm concentration ratio is 20.41 and 40.48, respectively. These ratios fall in the category of low concentration which means the market shows perfect competition to an oligopolistic competition. On the other hand the HHI values for four and eight firm are 104.16 and 204.95 which shows that the market is un-concentrated. It implies that market is in perfect competition.

### Marketing channels, costs, margins and Price spread of Papaya in selected market in Jaipur city of Rajasthan

Production of an agricultural/horticultural commodity is complete only when it reaches the hands of those who need it, *i.e.*, the consumers. All the commodities may not be produced in all the areas, because of variation in agro-climatic conditions. Hence, there arises a need for their movement from producers to ultimate consumers. Here, an attempt has been made to analyze the marketing channels and to estimate the costs and losses incurred by the various marketing agencies involved in the marketing of papaya in the study area.

The present study was taken only for Muhana *mandi* onwards so that in the study area, wholesaler cum-commission agent of papaya were observed to adopt the only following channel in marketing of papaya.

**Channel - Ia:** Wholesaler cum-commission agent → Retailer (Laalkhothi *mandi*) → Consumer.

**Channel - Ib:** Wholesaler cum-commission agent → Retailer (colonies) → Consumer.

**Channel - Ic:** Wholesaler cum-commission agent → Retailer (cart holders) → Consumer.

**Channel-II:** Wholesaler cum-commission agent → Processor → Consumer.

Among these channels, major quantity of papaya moved through channel- I and minor quantity was moved through channel-II in the study area. Similar results were examined by Singh and Singh (1999).

### Marketing charges at selected market in Jaipur city of Rajasthan

Costs of performing various functions prescribed by Fruit *Mandi* Samiti are as following:



### (i) Transportation charges

Transportation cost was paid by the fruit sellers on the basis of quantity of papaya. This also varied with the distance between farm and *mandi*. Trucks and trailers were common means used in transportation. The average cost of transportation estimated by channel-II was ₹ 450 per quintal in Rajasthan.

### (ii) Cost of carats/palis

Wholesalers purchased carats @ ₹ 146.66 Per quintal.

### (iii) Loading and unloading charges

Loading of papaya carats in truck/ trailer was done by the family labor of the farmers. At *mandi* unloading was done at prescribed charges of ₹ 5.50 per quintal. This cost was born by the producer seller as it was incurred prior to the sale. The cost of loading and unloading was thus ₹ 7.50 and ₹ 5.50 per quintal respectively.

### (iv) Weighing charges

Weighing charges @ ₹ 4.00 per quintal

### (v) *Mandi* fee

It was collected by the Fruit *Mandi* Samiti for rendering various services in the *mandi* area. The charges of *mandi* fee was @ 4.69 per cent 100 worth of produce and this cost was borne by the buyer

### (vi) Commission charges

Commission charges were realized by the commission agent at the rate of 6.00 per cent of the value of papaya from the buyer of the produce.

### (vi) Sorting & grading charges

The wholesalers incurred ₹ 6.00 per quintal for sorting and grading of papaya.

### Channel wise marketing cost of papaya in selected market in Jaipur city of Rajasthan

Costs incurred in marketing of papaya at *mandi* sale through different channels are presented in table 2, 3, 4 & 5. The major components of marketing cost usually consist of transportation, spoilage, market

fee, commission, etc. Cost incurred in marketing of papaya at *mandi* sale was going through different channels. We selected the Muhana *mandi* for study the marketing of papaya. Marketing channels of papaya started from wholesalers because producer's villages were very far from study area. So the data required from producer farmer were not possible to collect.

### Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ia

In this channel, wholesaler cum-commission agents purchase papaya from producer farmer who in turn sold it to the retailers and finally, retailers sold it to the consumers. The marketing costs, margins, price spread and price efficiency index in marketing of papaya by the wholesaler cum-commission agents at *mandi* level to the retailers of Laalkothi *mandi* and then to the consumers are presented in Table 2.

**Table 2:** Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ia (₹/quintal)

Particulars	Amount (₹/Qt)	% share in consumer's rupee
<b>Wholesaler cum-commission agent</b>		
Purchase Price (₹/qt)	540.92	32.71
Mandi Fees @ 4.69%	25.37	
Commission charges @ 6%	32.46	
Loading charges	7.50	
Unloading charges	5.50	
Sorting & grading	6.00	
Transportation	450	
Weighing	4.00	
Carats	146.66	
Spoilage Losses @ 3%	16.23	
Other charges	35.25	
Incurred Cost	728.97	
Wholesaler sale price	1320.05	
Market margin	50.16	
<b>Retailer (Laalkothi <i>mandi</i>)</b>		
Purchase Price (₹/qt)	1320.05	79.85
Mandi Fees	2.35	
Transportation	12.50	
Loading charges	7.50	
Unloading charges	5.50	

Spoilage Losses @ 3%	39.60
Other charges	15.00
Incurred Cost	82.45
Retailer sale price	1653.18
Market margin	250.73
<b>Marketing efficiency index and price spread</b>	
<b>Total marketing cost</b>	811.45
Marketing margin	300.89
Marketing efficiency index	1.37
Price spread	1112.34

Figures in parentheses are the costs, margins and price spread of respective column totals.

The perusal of the table 2 showed that the total marketing cost was estimated to be ₹ 811.45 per quintal out of this ₹ 728.97 per quintal and ₹ 82.45 per quintal were incurred by the wholesaler cum-commission agents and retailers of Laal kothi *mandi*, respectively. It was noticed that the wholesaler cum-commission agents had borne highest amount due to the payment of the transportation charges (₹ 450), packing material (₹ 146.66) and other charges (₹ 35.25). These findings are in consonance with Verma *et al.* (2013).

The wholesaler cum-commission agents purchased papaya at an average price of ₹ 540.92 per quintal and sold it to the retailer at ₹ 1320.05 per quintals. The margin retained by wholesaler cum-commission agents were ₹ 50.16 per quintal. The retailer purchased papaya at an average price of ₹ 1320.05 per quintal and sold it to the consumer at ₹ 1653.18 per quintals. The margin of retailer in this process was ₹ 250.73 per quintal. The wholesaler cum-commission agent's net share in consumer's rupee in the sale of papaya through the channel-I was 32.71 per cent and retailer's net share in consumer's rupee was 79.85 per cent. Marketing efficiency index and price spread was estimated to be 1.37 and ₹ 1112.34 in the selected market. Among the two market functionaries involved in channel-Ia retailer received the highest margin due to sale of papaya at high prices to the consumers in small quantity.

### Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ib

This channel was the most common marketing channel adopted by wholesaler cum-commission

agents in the study area. In this channel, these wholesaler cum-commission agents stored papaya for sale to the retailers of various colonies at same date or some later date. The wholesaler cum-commission agents took the produce to the Muhana *mandi* and sold it to the retailers of various colonies of the selected market.

The marketing cost incurred in movement of the produce through this channel is presented in table 3. On average marketing costs were turned out to be ₹ 809.37 per quintal out of this, ₹ 728.97 and ₹ 80.40 were incurred by the wholesaler cum-commission agent and retailers of various colonies, respectively which accounted for 89.35 per cent and 10.35 per cent of the total costs of marketing of papaya. The wholesaler cum-commission agents purchased papaya at an average price of ₹ 540.92 per quintal and sold it to the retailer at ₹ 1320.05 per quintals. The margin retained by wholesaler cum-commission agents were ₹ 50.16 per quintal. The retailer purchased papaya at an average price of ₹ 1320.05 per quintal and sold it to the consumer at ₹ 1722.20 per quintals. The margin of retailer in this process was ₹ 321.75 per quintal. The wholesaler cum-commission agent's net share in consumer's rupee in the sale of papaya through this channel was 31.41 per cent and retailer's net share in consumer's rupee was 76.5 per cent. Marketing efficiency index and price spread was estimated to be 1.46 and ₹ 1181.28 in the selected market.

**Table 3:** Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ib (₹/quintal)

Particulars	Amount (₹/Qt)	% share in consumer's rupee
<b>Wholesaler cum-commission agent</b>		
Purchase Price (₹/qt)	540.92	31.41
Mandi Fees @ 4.69%	25.37	
Commission charges @ 6%	32.46	
Loading charges	7.50	
Unloading charges	5.50	
Sorting & grading	6.00	
Transportation	450	
Weighing	4.00	
Carats	146.66	
Spoilage Losses @ 3%	16.23	

Other charges	35.25	
Incurred Cost	728.97	
Wholesaler sale price	1320.05	
Market margin	50.16	
<b>Retailer (Colonies)</b>		
Purchase Price (₹/qt)	1320.05	76.65
Transportation	8.00	
Loading charges	7.50	
Unloading charges	5.50	
Shop rent	4.50	
Spoilage Losses @ 3%	39.60	
Other charges	15.00	
Incurred Cost	80.40	
Retailer sale price	1722.20	
Market margin	321.75	
<b>Marketing efficiency index and price spread</b>		
Total marketing cost	809.37	
Marketing margin	371.91	
Marketing efficiency index	1.46	
Price spread	1181.28	

Figures in parentheses are the costs, margins and price spread of respective column totals.

### Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ic

The marketing cost incurred in movement of the produce through this channel is presented in table 4 on average marketing costs were turned out to be ₹ 809.17 per quintal out of this, ₹ 728.97 and ₹ 80.20 were incurred by the wholesaler cum-commission agent and retailers (cartholders), respectively.

**Table 4:** Costs, margins and price spread of papaya in Jaipur city of Rajasthan through channel-Ic (₹/quintal)

Particulars	Amount (₹/Qt)	% share in consumer's rupee
<b>Wholesaler cum-commission agent</b>		
Purchase Price (₹/qt)	540.92	32.09
Mandi Fees @ 4.69%	25.37	
Commission charges @ 6%	32.46	
Loading charges	7.50	
Unloading charges	5.50	
Sorting & grading	6.00	
Transportation	450	

Weighing	4.00	
Carats	146.66	
Spoilage Losses @ 3%	16.23	
Other charges	35.25	
Incurred Cost	728.97	
Wholesaler sale price	1320.05	
Market margin	50.16	
<b>Retailer (cart holders)</b>		
Purchase Price (₹/qt)	1320.05	78.31
Transportation	25.00	
Loading charges	7.50	
Unloading charges	5.50	
Rent of push cart	2.60	
Spoilage Losses @ 3%	39.60	
Incurred Cost	80.2	
Retailer sale price	1685.55	
Market margin	285.30	
<b>Marketing efficiency index and price spread</b>		
Total marketing cost	809.19	
Marketing margin	335.46	
Marketing efficiency index	1.41	
Price spread	1144.63	

Figures in parentheses are the costs, margins and price spread of respective column totals.

The wholesaler cum-commission agents purchased papaya at an average price of ₹ 540.92 per quintal and sold it to the retailer at ₹ 1320.05 per quintals. The margin retained by wholesaler cum-commission agents were ₹ 50.16 per quintal. The retailer purchased papaya at an average price of ₹ 1320.05 per quintal and sold it to the consumer at ₹ 1685.55 per quintals. The margin of retailer in this process was ₹ 285.30 per quintal. The total margins retained in this channel were ₹ 335.46 per quintal. The wholesaler cum-commission agent's net share in consumer's rupee in the sale of papaya through this channel was 32.09 per cent and retailer's net share in consumer's rupee was 78.31 per cent. Marketing efficiency index and price spread was estimated to be 1.41 and ₹ 1144.63 in the selected markets.

### Marketing costs and margins incurred in sale of papaya in channel-II in selected market of Jaipur city

In this channel, wholesaler cum-commission agents purchase papaya produce from producer farmer

who in turn sold it to the processors and finally, processors sold it to the consumers. In this channel, papaya moved from wholesaler cum-commission agents to processors and finally to consumers. The perusal of the table 5 showed that the total marketing costs were estimated to be ₹ 4770.40 per quintal, out of this ₹ 728.97 (15.28 per cent) and ₹ 4041.43 (84.72 per cent) were incurred by the wholesaler-cum-commission agent and processors, respectively.

The wholesaler cum-commission agents purchased papaya at an average price of ₹ 540.92 per quintal and sold it to the processors at ₹ 1320.05 per quintals. The margin retained by wholesaler cum-commission agents were ₹ 50.16 per quintal. The processors purchased papaya at an average price of ₹ 1320.05 per quintal and sold it to the consumer at ₹ 11250 per quintals. The margin of processors in this process was ₹ 5888.52 per quintal. The total margins retained in this channel were ₹ 5938.68 per quintal. The wholesaler cum-commission agent's net share in consumer's rupee in the sale of papaya through this channel was 4.81 percent and processor's net share in consumer's rupee was 11.73 per cent. Marketing efficiency index and price spread was estimated to be 1.80 and ₹ 10709.08 in the selected market.

**Table 5:** Marketing costs and margins in channel-II in selected market of Jaipur city: 2016-17 (₹/quintal)

Particulars	Amount (₹/Qt)	% share in consumer's rupee
<b>Wholesaler cum-commission agent</b>		
Purchase Price (₹/qt)	540.92	4.81
Mandi Fees @ 4.69%	25.37	
Commission charges @ 6%	32.46	
Loading charges	7.50	
Unloading charges	5.50	
Sorting & grading	6.00	
Transportation	450	
Weighing	4.00	
Carats	146.66	
Spoilage Losses @ 3%	16.23	
Other charges	35.25	
Incurred Cost	728.97	
Wholesaler sale price	1320.05	
Market margin	50.16	

<b>Processor</b>		
Purchase Price (₹/qt)	1320.05	11.73
Cost of raw material	3567.69	
Lobour charges	146.54	
Electricity charges	122.12	
Rent of shop	135.69	
Depreciation	8.73	
Repair & Maintenance	4.77	
Miscellaneous charges	9.54	
Transportation	6.75	
Spoilage losses @ 3%	39.60	
Incurred Cost	4041.43	
Processors sale price	11250	
Market margin	5,888.57	
<b>Marketing efficiency index and price spread</b>		
<b>Total marketing cost</b>	4,770.4	
Marketing margin	5938.68	
Marketing efficiency index	1.80	
Price spread	10709.08	

Figures in parentheses are the costs, margins and price spread of respective column totals.

## CONCLUSION

The four and eight firm concentration ratios of the selected firms were 20.41 and 40.48, respectively. These ratio falls in the category of low concentration which means the market shows perfect competition to an oligopolistic competition. On the other hand the HHI values for four and eight firm are 104.16 and 204.95 which shows that the market is un-concentrated. Total marketing costs in channel-Ia channel-Ib and channel-Ic were observed to be ₹ 811.45 per quintal, ₹ 809.37 per quintal and ₹ 809.19 per quintal respectively in channel-I. Total marketing costs were observed to be ₹ 4770.40 in channel-II. Agency-wise breakup of the overall marketing costs in channel-II revealed that processors incurred the major share and wholesaler cum- commission agent incurred minor share in total marketing cost which accounted 88.82 per cent and 11.12 per cent respectively. Price spread in channel-Ia channel-Ib and channel-Ic were observed to be ₹ 1112.34, ₹ 1181.28 and ₹ 1144.65 respectively as well as ₹ 10709.08 in channel-II, whereas price efficiency index was accounted to be 1.37, 1.46 and 1.41 in channel-I and 1.80 in channel-II in the selected market.



## Policy Implications

Keeping in view the above results, Market is in perfect competition, it is not price maker it is price taker. So interferences should not be required. Marketing channel-II which includes processors earned higher margins though marketing costs is more in this channel. So processing of papaya is more profitable than its direct sale. Channel-II also generates employment so processing should be encouraged in the thickly populated country like India, where unemployment and disguised unemployment prevailed.

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