

Economic analysis of pearl millet marketing in Rajasthan

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Received : 15.09.2012; Revised : 16.02.2013; Accepted : 17.03.2013

ABSTRACT

The present study was conducted to estimate marketing efficiency and price spread of pearl millet in Rajasthan. Regulated markets of Jaipur, Jodhpur and Nagaur were selected for the purpose of studying marketing cost incurred and margins earned by various intermediaries in marketing of pearl millet. Information regarding marketed surplus, price received and cost incurred in marketing was collected and price spread across different value chains was analyzed. In most of the markets, producer's share in consumer rupee was highest in Channel II followed by Channel I and it was lowest in Channel III. The analysis of relative share of producer per quintal of pearl millet revealed that in Jodhpur market, it was highest (68.84 %) in channel I. The relative share of producer in consumer rupee was almost same (67 %) in Nagaur and Jaipur markets in channel II. The net share of village trader was highest in Jaipur market (8.94 %) in channel I and net share of commission agent was highest (8.66 %) in Nagaur in channel III followed by Jodhpur (5.98 %). The net share of wholesaler (channel I) was highest in Jodhpur market (6.79 %) and lowest in Jaipur market (1.64 %). In Nagaur market, the relative share of retailer was highest (16.76 %) and lowest in Jaipur market (3.58 %). The analysis of efficiency of channel I in different markets revealed that it was highest in Jodhpur market (1.23) and lowest in Jaipur market (1.07). The analysis of efficiency of channel III revealed that it was the highest (1.09) in Jodhpur market followed by Nagaur (0.96).

KEY WORDS : Pearl millet, Economic, Marketing

How to cite this paper : Sharma, Shirish, Singh, I.P., Parthasarthy Rao, P., Basavaraj, G. and Nagaraj, N. (2013). Economic analysis of pearl millet marketing in Rajasthan. *Internat. J. Com. & Bus. Manage.* 6(1) : 66-75

India is a country of 1.21 billion people. More than 60 per cent of India's population lives in rural areas where the main occupation is agriculture. Indian agriculture is characterized by small farm holdings. The average farm size is only 1.57 hectares. Around 93 per cent of farmers have land holdings smaller than 4 ha and they cultivate nearly 55 per cent of the arable land (Economic Survey 2011-12). Millets are the major food sources in arid and semi-arid regions of the world, and feature in the traditional cuisine of many others.

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Pearl millet is one of the most important cereals for food security in the arid and semi-arid tropical regions. It is a significant source of dietary energy and nutritional security of poor farmer-consumers in several highly populated regions of India. The crop has relatively high nutritional value and high amount of iron (8mg/100g). However, several anti nutritional factors such as phytates, oxalates and polyphenols are present in pearl millet which may decrease the bioavailability of the iron. Milling of grains and processing of pearl millet as per the traditional cooking methods may have an effect on the *in vitro* available iron and the bioavailable iron. It is thus, imperative to assess the nutrient and non-nutrient content of pearl millet post milling and processing. Marketing is the ultimate stage where the farmer converts all his efforts and investment into cash. Any bad treatment at this point, which is extremely sensitive, will definitely affect the farmer's enthusiasm for further investment and continuation of farm business. With the introduction of regulated markets in India, the traditional agricultural market

sector has started witnessing fundamental change in the market conditions. However, regulated markets are not operating effectively and properly due to some limitations. The farmers expressed the problem of high price fluctuations. An efficient marketing system is an important means for raising the income levels of the growers on the one hand and increasing the consumer satisfaction on the other. Marketing efficiency is related to the cost involved in moving goods from the producer to the consumer. A reduction in marketing cost without affecting consumer satisfaction indicates improvement in efficiency. Marketing cost would measure the extent of market services performed. If the services are numerous and varied, the cost will also be higher. Since, marketing margin is a measure of the market power of the intermediaries, the larger their number and strength, the larger would be their margin. Efficient marketing plays an important role in the development of any enterprise. Hence, it was found necessary to investigate the prevalent marketing systems and channels, the marketing costs, margins and price spread in different channels as well as in different markets and efficiency of different marketing channels.

METHODOLOGY

Jaipur, Jodhpur and Nagaur districts were selected for the present study because these districts had substantial area under pearl millet. Market survey was conducted to assess price spread across and different value chains for pearl millet grain. Regulated markets of Jaipur, Jodhpur and Nagaur were selected for the purpose of studying marketing cost incurred and margins earned by various intermediaries in marketing of pearl millet. A sample of 45 farmers, 15 each from three selected markets who sold their produce in these regulated markets and five wholesalers, five commission agents, and five retailers from each market were selected for the study thereby, making a sample of 45 intermediaries from three markets. Primary data were collected on pre-structured schedules. The pre-testing of the schedule was done by collection of data from few farmers and relevant market information from commission agents, wholesalers, and retailers through personal interview method. Information regarding marketed surplus, price received and cost incurred in marketing was collected and price spread across different value chain was analyzed.

Marketing efficiency:

To study the marketing efficiency, Acharya's measure of modified marketing efficiency was used:

$$MME = [RP \div (MC+MM)] - 1$$

where,

MME = Modified measure of marketing efficiency

RP = Retailer's sale price (Rs./q) and;

$$RP = FP+MC+MM$$

MC = Total marketing cost (Rs./q)

MM = Total net margins of intermediaries (Rs./q)

FP = Net price received by farmers (Rs./q)

Price spread:

To study the price-spread in marketing of pearl millet, data pertaining to marketing costs and margins were analyzed as under:

Average gross margin:

The average gross margin was worked out using the following formula:

$$\text{Average gross margin} = \frac{\text{Total sale value} - \text{Total purchase value}}{\text{Quantity of the produce handled}}$$

Absolute margin:

Absolute margin earned by a middleman was calculated as:

$$\text{Absolute margin} = P_R - (P_{pi} + C_{mi})$$

$$\text{Percentage} = \frac{P_{Ri} - (P_{pi} + C_{mi})}{P_{Ri}} \times 100$$

where,

P_{Ri} = Total value of receipts of Pearl Millet (Rs/q)

P_{pi} = Total purchase value of Pearl Millet (Rs./q) and

C_{mi} = Cost incurred in marketing of Pearl Millet (Rs./q)

Total cost of marketing:

Total cost of marketing was calculated as under;

$$C = C_F + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$$

where,

C = Total cost of marketing (Rs./q)

C_F = Cost borne by the producer/farmer from the time at which the produce leaves the farm till the sale of the produce (Rs./q), and

C_{mi} = Cost incurred by the i^{th} middlemen in the process of buying and selling (Rs./q)

Producer's share:

The producer's share in the consumer rupee was worked out as under:

$$P_s = \frac{P_F}{P_C} \times 100$$

where,

P_s = Producer's share in consumer rupee (in %)

P_F = Price of the produce received by the farmer (Rs/q)

P_C = Price of the produce paid by the consumer (Rs/q).

ANALYSIS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under following heads:

Marketing costs and margins:

The marketing cost and margins were worked out for this commodity in all the selected markets. The marketing costs and margins were calculated during the peak period since marketing costs and margins vary, depending upon the channels through which the produce passes on its way to the consumer.

Channel-I Producer	→Village traders→ Wholesaler→ Retailer→ Consumer
Channel-II Producer	→Wholesaler→ Retailer→ Consumer
Channel-III Producer	→Commission agent→Wholesaler→Retailer→Consumer

Table 1 shows the marketing costs and margins per quintal of pearl millet through different channels in Jaipur market. The table reveals that the expenses incurred by the producer were Rs. 8 per quintal and Rs. 23 per quintal in channel

Particulars	Channel I (P-VT-W-R-C)		Channel II (P-W-R-C)		Channel III (P-CA-W-R-C)	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Net price received by producer	740	67.27	742	67.45	727	66.09
Cost incurred by producer						
Loading charges	-	-	1	0.09	1	0.09
Unloading charges	-	-	1	0.09	1	0.09
Transportation	-	-	5	0.45	5	0.45
Stitching	-	-	1	0.09	1	0.09
Commission agent charges (2 %)	-	-	-	-	15	1.36
Total cost	-	-	8	0.73	23	2.09
Producer sale price/CA/VT purchase price	740	67.27	-	-	750	68.18
Cost incurred by VT/CA	-	-	-	-	-	-
Mandi tax @ 0.5 per cent	3.7	0.34	-	-	3.75	0.34
Loading charges	1	0.09	-	-	-	-
Transportation	5	0.45	-	-	-	-
Unloading charges	1	0.09	-	-	-	-
Weighing	1	0.09	-	-	1	0.09
Stitching charges (Rs./q)	1	0.09	-	-	-	-
Total cost	11.7	1.06	-	-	4.75	0.43
Net margin of VT/CA	98.30	8.94	-	-	45.25	4.11
Sale price of VT/CA /producer/ purchase price of wholesaler	850	77.27	750	68.18	800	72.73
Cost incurred by wholesaler						
Loading charges	1	0.09	1	0.09	1	0.09
Unloading charges	1	0.09	1	0.09	1	0.09
Cost of gunny bags	50	4.55	50	4.55	50	4.55
Transportation	30	2.73	50	4.55	50	4.55
Total cost	82	7.45	102	9.27	102	9.27
Net margin of wholesaler	18	1.64	148	13.45	98	8.91
Sale price of wholesaler/purchase price of retailer	950	86.36	1000	90.91	1000	90.91
Cost incurred by retailer						
Transportation charges from mandi to shop	55	5	55	5	55	5.00
Labour charges for loading and unloading	2	0.18	2	0.18	2	0.18
Storage facilities	3.60	0.33	3.60	0.33	3.60	0.33
Total cost	60.60	5.51	60.60	5.51	60.60	5.51
Net margin of retailer	89.40	8.13	39.40	3.58	39.40	3.58
Sale price of retailer /Purchase price of consumer	1100	100.00	1100	100.00	1100	100

II and channel III, respectively. The transportation charges formed the highest cost incurred by the producer *i.e.* Rs 5 per quintal of pearl millet in II and III channels both. The expenses incurred by the retailer in all channels were Rs. 60.60. The margin of the retailer was Rs. 89.40 per quintal of pearl millet in Channel I and it was Rs.39.40 for channel II and III both. In Channel I, total cost incurred by village trader was Rs. 11.70 per quintal which was 1.06 per cent of consumer rupee paid. In case of commission agent, it was Rs. 4.75 in Channel III. The producer's share in consumer rupee was highest in

channel II followed by channel I and it was lowest in channel III.

Table 2 shows the marketing costs and margins per quintal of pearl millet through different channels in Jodhpur market. The table shows that producer's share in consumer rupee was highest in channel II (69.02 %) followed by channels I and it was lowest in channel III. The table revealed that the expenses incurred by the producer were Rs. 8 per quintal and Rs. 23 per quintal in channel II and channel III. The transportation charges accounted the highest cost incurred

Table 2 : Marketing cost and margins per quintal of pearl millet through different channels in Jodhpur market

Particulars	Channel I (P-VT-W-R-C)		Channel II (P-W-R-C)		Channel III (P-CA-W-R-C)	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Net price received by producer	740	68.84	742	69.02	727	67.63
Cost incurred by producer						
Loading charges	-	-	1	0.09	1	0.09
Unloading charges	-	-	1	0.09	1	0.09
Transportation	-	-	5	0.47	5	0.47
Stitching	-	-	1	0.09	1	1.4
Commission agent charges (2 %)	-	-	-	-	15	0.09
Total cost	0	-	8	0.74	23	2.14
Producer sale price/CA purchase price	740	68.84	750	69.77	750	69.77
Cost incurred by village trader/commission agent						
Mandi tax @ 0.5 per cent	3.75	0.34	-	-	3.75	0.35
Loading charges	1	0.09	-	-	-	-
Transportation	5	0.47	-	-	-	-
Unloading charges	1	0.09	-	-	-	-
Weighing	2	0.19	-	-	2	0.19
Stitching charges (Rs./q)	1	0.09	-	-	-	-
Total cost	12.7	1.18	-	-	5.75	0.53
Net margin of Village Trader/Commission Agent	67.3	6.26	-	-	64.25	5.98
Sale price of village trader /producer/purchase price of wholesaler	820	76.28	-	-	820	76.28
Cost incurred by wholesaler						
Loading charges	1	0.09	1	0.09	1	0.09
Unloading charges	1	0.09	1	0.09	1	0.09
Cost of gunny bags	50	4.65	50	4.65	50	4.65
Transportation	35	3.26	35	3.26	35	3.26
Total cost	87	8.09	87	8.09	87	8.09
Net margin of wholesaler	73	6.79	143	13.3	73	6.79
Sale price of wholesaler/purchase price of retailer	980	91.16	980	91.16	980	91.16
Cost incurred by retailer						
Transportation charges from mandi to shop	16	1.49	16	1.49	16	1.49
Labour charges for loading and unloading	2	0.19	2	0.19	2	0.19
Storage facilities	3	0.28	3	0.28	3	0.28
Total cost	21	1.95	21	1.95	21	1.95
Net margin of retailer	74	6.88	74	6.88	74	6.88
Sale price of retailer /purchase price of consumer	1075	100.00	1075	100	1075	100

by the producer *i.e.* Rs 5 per quintal of pearl millet in channel II and channel III both. The expenses incurred by the retailer in all channel was Rs. 21. The margin of the retailer was Rs. 74 per quintal of pearl millet, constituting 6.88 per cent of consumer price paid in all three channels. The margin of the wholesaler was Rs. 73 per quintal in channel I, and channels III. In case of channel II, it was Rs. 143 per quintal. In channel I, total cost incurred by village trader was Rs. 12.7 per quintal which was 1.18 per cent of consumer rupee paid. In case of commission agent, it was Rs. 5.75 in channel III.

Table 3 shows the marketing costs and margins per

quintal of pearl millet through different channels in Nagaur market. It was observed that producers share in consumer rupee was highest in channel II followed by channels III and lowest in channel I. The table revealed that the expenses incurred by the producer were Rs. 7 per quintal which was 0.64 per cent in consumer rupee and Rs. 22 per quintal in channel II and III. The transportation charges formed the highest cost incurred by the producer *i.e.* Rs. 4 per quintal of pearl millet in channel II and III both. The expense incurred by the retailer in all channels was Rs. 15.60. The margin of the retailer was Rs. 184.40 per quintal of pearl millet, constituting

Table 3 : Marketing cost and margins per quintal of pearl millet through different channels in Nagaur market

Particulars	Channel I (P-VT-W-R-C)		Channel II (P-W-R-C)		Channel III (P-CA-W-R-C)	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Net price received by producer	700	63.64	743	67.55	728	66.18
Cost incurred by producer						
Loading charges	-	-	1	0.09	1	0.09
Unloading charges	-	-	1	0.09	1	0.09
Transportation	-	-	4	0.36	4	0.36
Stitching	-	-	1	0.09	15	1.36
Commission agent charges (2 %)	-	-	-	-	1	0.09
Total cost	-	-	7	0.64	22	2
Producer sale price/CA/VT purchase price	700	63.64	750	68.18	750	68.18
Cost incurred by VT/CA	-	-	-	-	-	-
Mandi tax @ 0.5 per cent	3.50	0.32	-	-	0.37	0.34
Loading charges	1	0.09	-	-	-	-
Transportation	4	0.36	-	-	-	-
Unloading charges	1	0.09	-	-	-	-
Weighing	1	0.09	-	-	1	0.09
Stitching charges (Rs./q)	1	0.09	-	-	-	-
Total cost	10.5	0.95	-	-	4.75	0.43
Net margin of VT/CA	89.5	8.14	-	-	95.25	8.66
Sale price of VT/CA /producer/ purchase price of wholesaler	800	72.73	750	68.18	850	77.27
Cost incurred by wholesaler						
Loading charges	1	0.09	1	0.09	1	0.09
Unloading charges	1	0.09	1	0.09	1	0.09
Cost of gunny bags	40	3.64	40	3.64	40	3.64
Transportation	20	1.82	20	1.82	20	1.82
Total cost	62	5.64	62	5.64	62	5.64
Net margin of wholesaler	38	3.45	88	8	38	3.45
Sale price of wholesaler/purchase price of retailer	900	81.82	900	81.82	950	86.36
Cost incurred by retailer	-	-	-	-	-	-
Transportation charges from mandi to shop	8	0.73	8	0.73	8	0.73
Labour charges for loading and unloading	4	0.36	4	0.36	4	0.36
Storage facilities	3.60	0.33	3.60	0.33	3.60	0.33
Total cost	15.60	1.42	15.60	1.42	15.60	1.42
Net margin of retailer	184.40	16.76	184.40	16.76	134.40	12.22
Sale price of retailer /purchase price of consumer	1100	100	1100	100	1100	100

16.76 per cent of consumers' price paid in channel I and II. The margin of the wholesaler was Rs. 38 per quintal in channel I and Rs 88 in Channel II. In case of channel III, it was Rs. 38 per quintal.

Relative share of intermediaries in marketing of pearl millet:

Relative share of producer:

The analysis of relative share of producer per quintal of pearl millet (Table 4) reveals that in Jodhpur market, it was highest (68.84 %) followed by Jaipur (64.31 %) in channel I. In case of Nagaur relative share of producer was lowest (63.64 %).

It is evident from Table 5 that in channel II highest relative share of producer in consumer rupee was reported in Jodhpur market (69.02 %). In Nagaur and Jaipur market, it was almost same (67 %).

Table 6 shows the relative share of producer in Channel III. In The relative share of producer in Jodhpur market was

the highest (67.63 %). In Jaipur market, it was lowest (66.09 %).

The analysis of Table 7 reveals that the net share of village trader was highest in Jaipur market (8.94 %) in channel I. In this market, marketing cost of village trader was 1.06 per cent. In Jodhpur market, the village trader had minimum share 6.26 per cent.

Relative share of commission agent:

The analysis of Table 8 reveals that net share of commission agent was highest (8.66 %) in Nagaur in channel III followed by Jodhpur (5.98 %).

Relative share of wholesaler:

Table 9 reveals that relative share of wholesaler (Channel I) was highest in Jodhpur market which was 6.79 per cent and lowest in Jaipur market which was 1.64 per cent.

Table 10 presents relative share of wholesaler in channel

Markets	Price paid by consumer	Sale price of producer	Marketing cost	Net share
Jaipur	1100 (100.00)	740 (67.27)	0	710 (64.31)
Jodhpur	1075 (100.00)	740 (68.84)	0	740 (68.84)
Nagaur	1100 (100.00)	700 (63.64)	0	700 (63.64)

Markets	Price paid by consumer	Sale price of producer	Marketing cost	Net share
Jaipur	1100 (100.00)	750 (68.18)	8 (0.73)	742 (67.45)
Jodhpur	1075 (100.00)	750 (69.77)	8 (0.74)	742 (69.02)
Nagaur	1100 (100.00)	750 (68.18)	7 (0.64)	743 (67.55)

Markets	Price paid by consumer	Sale price of producer	Marketing cost	Net share
Jaipur	1100 (100.00)	750 (68.18)	23 (2.09)	727 (66.09)
Jodhpur	1075 (100.00)	750 (69.77)	23 (2.14)	727 (67.63)
Nagaur	1100 (100.00)	750 (68.18)	22 (2.00)	728 (66.18)

Markets	Price paid by consumer	Purchase price of village trader	Sale price of village trader	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	740 (67.27)	850 (77.27)	110 (10.00)	11.7 (1.06)	98.3 (8.94)
Jodhpur	1075 (100)	740 (68.84)	820 (76.28)	80 (7.44)	12.7 (1.18)	67.3 (6.26)
Nagaur	1100 (100)	700 (63.64)	800 (72.73)	100 (9.09)	10.5 (0.95)	89.5 (8.14)

Markets	Price paid by consumer	Purchase price of commission agent	Sale price of commission agent	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	750 (68.18)	800 (72.73)	50 (4.55)	4.75 (0.43)	45.25 (4.11)
Jodhpur	1075 (100)	750 (69.77)	820 (76.28)	70 (6.51)	5.75 (0.53)	64.25 (5.98)
Nagaur	1100 (100)	750 (68.18)	850 (77.27)	100 (9.30)	4.75 (0.43)	95.25 (8.66)

Table 9: Relative share of wholesaler in consumer rupee in channel I (Rs. /q)

Markets	Price paid by consumer	Purchase price of wholesaler	Sale price of wholesaler	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	850 (77.27)	950 (86.36)	100 (9.09)	82 (7.45)	18 (1.64)
Jodhpur	1075 (100)	820 (76.28)	980 (91.16)	160 (14.88)	87 (8.09)	73 (6.79)
Nagaur	1100 (100)	800 (72.73)	900 (81.82)	100 (9.09)	62 (5.64)	38 (3.45)

Table 10: Relative share of wholesaler in consumer rupee in channel II (Rs. /q)

Markets	Price paid by consumer	Purchase price of wholesaler	Sale price of wholesaler	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	750 (68.18)	1000 (90.91)	250 (22.73)	102 (9.27)	148 (13.45)
Jodhpur	1075 (100)	750 (69.77)	980 (91.16)	230 (21.40)	87(8.09)	143 (13.30)
Nagaur	1100 (100)	750 (68.18)	900 (81.82)	150 (13.64)	62 (5.64)	88 (8.00)

II. The table reveals that the highest share of wholesaler was in Jaipur market (13.45 %) followed by Jodhpur. The lowest share of wholesaler was in Nagaur (8.00 %).

Table 11 reveals that relative share of wholesaler in channel III was highest in Jaipur market (8.91 %) followed by Jodhpur. The minimum share was found in Nagaur market (3.45 %).

Table 12 shows the relative share of retailer in consumer rupee in channel I. In Nagaur market, it was found to be 16.76 per cent which was highest in channel I. In Jodhpur market, it was lowest (6.88 %).

Table 13 shows the relative share of retailer in consumer rupee in Channel II. In Nagaur market, the relative share of retailer was highest (16.76 %) and lowest in Jaipur market

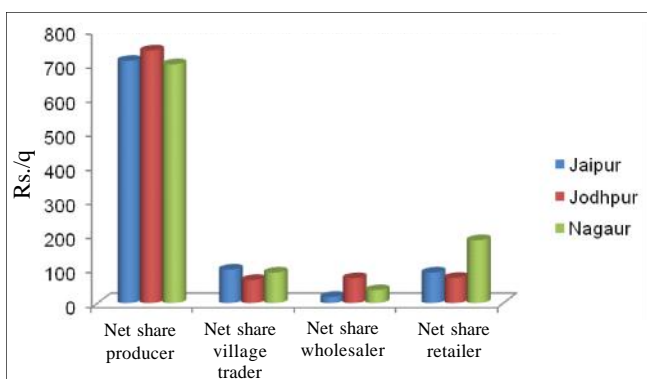


Fig. 1 : Relative share of intermediaries in consumer rupee in channel I

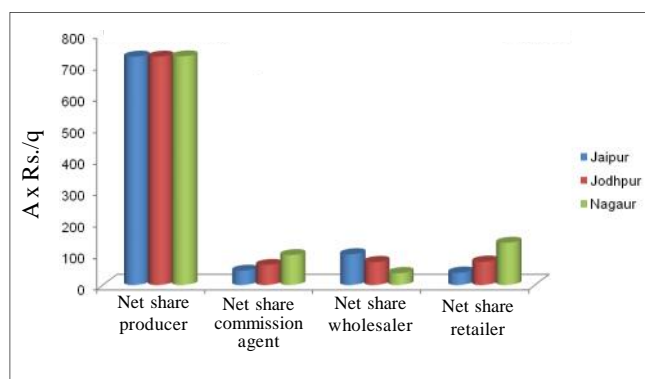


Fig. 3 : Relative share of intermediaries in consumer rupee in channel III

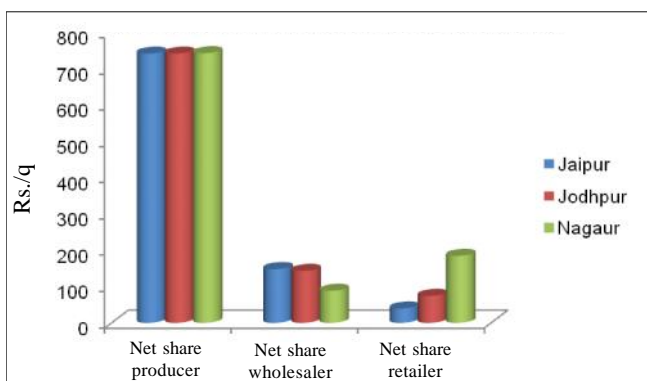


Fig. 2 : Relative share of intermediaries in consumer rupee in channel II

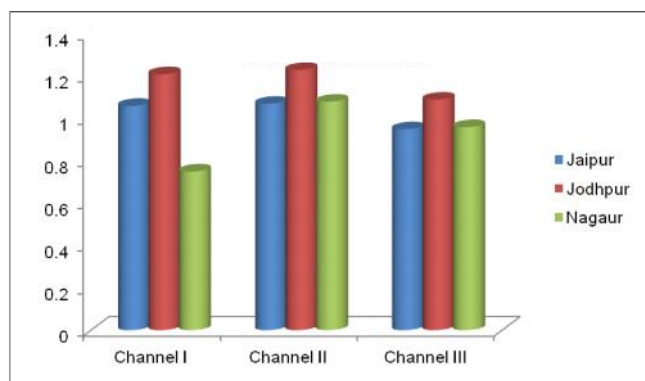


Fig. 4 : Marketing efficiency of various channel in selected markets

Table 11: Relative share of wholesaler in consumer rupee in channel III (Rs./q)

Markets	Price paid by consumer	Purchase price of wholesaler	Sale price of wholesaler	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	800 (72.73)	1000 (90.91)	200 (18.18)	102 (9.27)	98 (8.91)
Jodhpur	1075 (100)	820 (76.28)	980 (91.16)	160 (14.88)	87 (8.09)	73 (6.79)
Nagaur	1100 (100)	850 (77.27)	950 (86.36)	100 (9.09)	62 (5.64)	38 (3.45)

Table 12: Relative share of retailer in consumer rupee in channel I (Rs./q)

Markets	Price paid by consumer	Price paid by retailer	Sale price of retailer	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	950 (86.36)	1100 (100)	150 (13.64)	60.6 (5.51)	89.4 (8.13)
Jodhpur	1075 (100)	980 (91.16)	1075 (100)	95 (8.84)	21 (1.95)	74 (6.88)
Nagaur	1100 (100)	900 (81.82)	1100 (100)	200 (18.18)	15.6 (1.42)	184.4 (16.76)

Table 13 : Relative share of retailer in consumer rupee in channel II (Rs./q)

Markets	Price paid by consumer	Price paid by retailer	Sale price of retailer	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	1000 (90.91)	1100 (100)	100 (9.09)	60.6 (5.51)	39.4 (3.58)
Jodhpur	1075 (100)	980 (91.16)	1075 (100)	95 (8.84)	21 (1.95)	74 (6.88)
Nagaur	1100 (100)	900 (81.82)	1100 (100)	200 (18.18)	15.6 (1.42)	184.4 (16.76)

(3.58 %).

Relative share of retailer in consumer rupee in Channel III is presented in Table 14. The table reveals that the relative share of retailer in Nagaur market, was the highest (12.22 %) followed by Jodhpur market (6.88 %).

Price spread:

Price spread in channel I :

Table 15 shows that the producer's share in consumer rupee was 68.84 per cent in Jodhpur. The price spread was 31.16 per cent, out of which 11.23 per cent was accounted for by marketing costs and 19.93 per cent was accounted for by

Table 14 : Relative share of retailer in consumer rupee in channel III (Rs./q)

Markets	Price paid by consumer	Price paid by retailer	Sale price of retailer	Gross margin	Marketing cost	Net share
Jaipur	1100 (100)	1000 (90.91)	1100 (100)	100 (9.09)	60.60 (5.51)	39.4 (3.58)
Jodhpur	1075 (100)	980 (91.16)	1075 (100)	95 (8.84)	21 (1.95)	74 (6.88)
Nagaur	1100 (100)	950 (86.36)	1100 (100)	150 (13.64)	15.6 (1.42)	134.40 (12.22)

Table 15 : Price spread in channel I (P-VT-W-R-C)

Particulars	Jaipur		Jodhpur		Nagaur	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Producers net price	740	67.27	740	68.84	700	63.64
Cost incurred by						
Producer	0	0	0	0	0	0
VT	11.7	1.06	12.7	1.18	10.5	0.95
Wholesaler	82	7.45	87	8.09	62	5.64
Retailer	60.60	5.51	21	1.95	15.60	1.42
Total cost	154.3	14.03	120.7	11.23	88.10	8.01
Margin of						
VT	98.30	8.94	67.30	6.26	89.50	8.14
Wholesaler	18	1.64	73	6.79	38	3.45
Retailer	89.40	8.13	74	6.88	184.40	16.76
Total margin	205.70	18.70	214.30	19.93	311.90	28.35
Sale price of retailer/ purchase price of consumer	1100	100	1075	100	1100	100

margins. In Jaipur producer's share in consumer rupee was 67.27 per cent.

Price spread in channel II:

The perusal of Table 16 reveals that producer's share in consumer rupee was 69.02 per cent in Jodhpur which was highest followed by Nagaur and price spread was as high as 30.38 per cent, out of which 10.79 per cent was accounted for by marketing costs and 20.19 per cent was accounted for by margins.

Price spread in channel III:

Table 17 shows that the producer's share in consumer rupee was 67.63 per cent in Jodhpur. In Jodhpur the price spread was as high as 32.33 per cent, out of which 12.72 per cent was accounted for by marketing costs and 19.65 per cent

was accounted for by margins.

Marketing efficiency:

Efficiency of channel I:

Table 18 revealed that the efficiency of Jodhpur market was highest (1.21) followed by Jaipur (1.06). The minimum efficiency was found in Nagaur market (0.75).

Efficiency of Channel II:

The analysis of efficiency of channel II in different markets (Table 19) revealed that it was highest in Jodhpur market (1.23) and lowest in Jaipur market (1.07).

Efficiency of channel III:

Table 20 revealed that the efficiency of Jodhpur was the highest (1.09) followed by Nagaur (0.96).

Table 16 : Price spread in channel II (P-W-R-C)						
Particulars	Jaipur		Jodhpur		Nagaur	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Producers net price	742	67.45	742	69.02	743	67.55
Cost incurred by						
Producer	8	0.73	8	0.74	7	0.64
Wholesaler	102	9.27	87	8.09	62	5.64
Retailer	60.6	5.51	21	1.95	15.6	1.42
Total cost	170.6	15.51	116	10.79	84.6	7.69
Margin of						
Wholesaler	148	13.45	143	13.30	88	8.00
Retailer	39.4	3.58	74	6.88	184.4	16.76
Total margin	187.4	17.04	217	20.19	272.4	24.76
Sale price of retailer/ purchase price of consumer	1100	100.00	1075	100.00	1100	100.00

Table 17 : Price spread in channel III (P-CA-W-R-C)						
Particulars	Jaipur		Jodhpur		Nagaur	
	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee	Rs./q	Per cent share in consumer rupee
Producers net price	727	66.10	727	67.63	728	66.18
Cost incurred by						
Producer	23	2.09	23	2.14	22	2.00
Commission agent	4.75	0.43	5.75	0.53	4.75	0.43
Wholesaler	102	9.27	87	8.09	62	5.64
Retailer	60.6	5.51	21	1.95	15.6	1.42
Total cost	190.35	17.30	136.75	12.72	104.35	9.49
Margin of						
Commission agent	45.25	4.11	64.25	5.98	95.25	8.66
Wholesaler	98	8.91	73	6.79	38	3.45
Retailer	39.4	3.58	74	6.88	134.4	12.22
Total margin	182.65	16.60	211.25	19.65	267.65	24.33
Sale price of retailer/ purchase price of consumer	1100	100.00	1075	100.00	1100	100.00

Table 18 : Marketing efficiency in channel I

Markets	Retailer's sale price	Total marketing costs	Total net margins of intermediaries (MM)	Net price received by farmers	MME
Jaipur	1100	154.3	205.7	740	1.06
Jodhpur	1075	120.7	214.3	740	1.21
Nagaur	1100	88.1	311.9	700	0.75

Table 19 : Marketing efficiency of channel II

Markets	Retailer's sale price	Total marketing costs	Total net margins of intermediaries (MM)	Net price received by farmers	MME
Jaipur	1100	170.6	187.4	742	1.07
Jodhpur	1075	116	217	742	1.23
Nagaur	1100	84.6	272.4	743	1.08

Table 20 : Marketing efficiency in channels III

Markets	Retailer's sale price	Total marketing costs	Total net margins of intermediaries (MM)	Net price received by farmers	MME
Jaipur	1100	190.4	182.7	727	0.95
Jodhpur	1075	136.75	211.25	727	1.09
Nagaur	1100	104.35	267.65	728	0.96

Lalitha Sudha *et al.* (2005) had made some observations on price spread and market margin of Gingelly from Andhra Pradesh white Chakraborty (2005) of agricultural produce from Tipura. Deshmukh *et al.* (2010) had also contributed some important information on marketed surplus and price spread in different channels of pearl millet marketing.

Policy implications:

The study revealed that the smaller the length of the channel, the larger is the producer's share in consumer's rupee. Farmers of the study area should, therefore, adopt channel in which price spread is minimum. The post harvest immediate sale of pearl millet fetches low prices of the produce. Therefore, the farmers should avail marketing loan against warehouse receipts to delay selling pearl millet in post harvest period. Credit facilities should also be availed by medium and large farmers under Gramin Bhandaran Yojana (Rural Warehousing Scheme) to have scientific storage facilities at village level to improve their holding capacity.

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