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Estimation of marketing cost and marketing margin under different channel of pear millet marketing in Morena District of Madhya Pradesh

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Abstract
An investigation has been conducted on marketing cost and marketing margin under different channel of pearl millet marketing in Morena District of Madhya Pradesh. Morena district was selected purposely for this study due to this district has remarkable position under pearl millet production in the Madhya Pradesh. After selection of district and crop, Morena tehsils, was selected randomly out of six Tehsil, then five village were selected randomly from Morena tehsil, thereafter a list of pear millet growers prepared and arranged into ascending order namely small, medium and large, from each categories 30 farmers selected randomly. After analysis of data it was observed under channel I- that out of the 90 sampled farmers, 26.66% sold the pearl millet of their own village while under channel II- 73.33% farmers sold their produce in the Morena Krishi Upaj Mandi. The marketing efficiency in the channel II was seen greater as compared to channels I. which indicating that channel- I has a higher marketing efficiency than any other channel.

Keywords: Pearl millet, marketing channel, marketing cost, marketing efficiency, price spread

Introduction

Bajra is commonly known as pearl millet. It is considered a poor man's food and is one of the major coarse grain cereals crop. It widely grown as a rain fed crop in India. It is the main crop of China, India, south eastern Asia, Sudan, Pakistan, Arabia, Russia and Nigeria. India is the largest prouder of pearl millet crop. This crop is well adopted in drought condition, low fertile land, and high temperature. In Madhya Pradesh pear millet is grown on 374265 thousand hectare with the production of 909012 thousand metric ton and productivity 2429 kg/ha. Morena district is the leading producer of pearl millet occupied an area of 221720 thousand hectare with the production of 552083 metric ton and productivity of 2490 kg/ha. (mpkrishi.govt.in, 2021). Keeping the above fact in mind the present study is confined entitle estimation of marketing cost and marketing margin under different channel of pear millet marketing in Morena District of Madhya Pradesh.

Research Methodology

Morena district was selected purposely for the study due to Morena district has remarkable position under pearl millet production in the Madhya Pradesh. After selection of district and crop, Morena tehsils, was selected randomly out of six Tehsil, then five village were selected randomly from Morena tehsil, thereafter a list of pear millet growers prepared and arranged into ascending order namely small, medium and large, from each categories 30 farmers selected randomly.

Marketable and marketed surplus: Marketable surplus refers to the residual quantity left with the producers after meeting their requirement for family consumption, seeds, wages and other requirements. [1]

$$MS = P-C$$

Where
MS= Marketable surplus (qtls)
P= Total production of pearl millet (qtls/farm)
C= Total requirements for family and farm (qtls/annum)

Marketed surplus: The marketed surplus was worked out as under: It is the quantity of a commodity which a farmer actual sale in the market.

Marketed surplus = MS-Qs

Where,
MS= Marketable surplus
Qs= Quantity stored for future sales

Marketing channels
Marketing channel is a path traced in the direct or indirect transfer of title to a product, as it moves from a producer to ultimate consumer or industrial users.

Studying of marketing costs, margins and price spread
Average Gross Margin– The average gross margin at each successive level of marketing was worked out using the formula:

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

Absolute margin- Absolute margin earned by a middleman was calculated as:

Absolute margin = PRi - (PPi + CMi)

Where:
PPi = Total purchase value of goods per unit (purchase price), and
CMiPRi = Total value of receipts per unit (sale price),= Per unit cost incurred in marketing by middlemen.

Price spread: The breakup of costs, margin and share of the producer- farmer and different middlemen was worked out in the consumer's price in simple percentage terms. To study the price spread in marketing of pearl millet, the marketing cost and margins were worked out as under:

Marketing Cost
Total cost of marketing was calculated as under:

C = CF+ CM1 + CM2 + CM3 +………………+ CMN

Where,
C = Total cost of marketing (Rs/qtl)
C= Cost borne by the producer/farmer from the time at which the produce leaves the farm till the sale of the produce (Rs/qtl)
C =Cost incurred by the ith middleman in the process of buying and selling (Rs/qtl)
P =Purchase price of ith intermediary (Rs/qtl)
C =Cost incurred in marketing of ith intermediary (Rs/qtl)

Producer's share in consumer's rupee
The Producer's share in the consumer rupee was worked out as under by the following formula:

PS=PF/PC× 100

Where,
PS=Producer's share in consumer rupees (in per cent)
PF =Price of the produce received by the farmer (Rs/qtl)
PC =Price of the produce paid by the consumer (Rs/qtl)
Producer's share in consumer's rupee:

Percentage margin The percentage margin was calculated as:

$$\text{Percentage margin} = \frac{PRi - (PPi + CMi)}{PRi} \times 100$$

Where:
PRi = Total value of receipts per unit (sales price),
PPi = Total purchase value of goods per unit (purchase price), and
CMi = Cost incurred on marketing per units by middlemen.

Total cost of marketing – Total cost of marketing was calculated as under:

C = CF + CM1 + CM2 + CM3 +CMi. + CMn

Where
C = Total cost of marketing of the commodity,
CF = Cost borne by the producer-farmer from the time at which the produce leaves the farm till the sale of the produce,
CMi = Cost incurred by the ith middlemen in the process of buying and selling.

Marketing efficiency: Marketing efficiency shows the relationship between marketing variables and how efficiently the marketing system is running. Larger value of marketing efficiency shows that market is more efficient.

Marketing Efficiency = $\frac{V}{I} - 1$

Where,
V = Value of goods sold (consumer's price)
I = Total marketing cost + margins.
The higher the ratio, the more the marketing efficiency.

ME = FP/(MC+MM]

Where, ME = marketing efficiency
FP) = net price receive by farmer (Rs/qtl)
MC = total marketing cost (Rs/qtl)
MM = total marketing margins of intermediaries (Rs/qtl)

Results and Discussions
Marketing channels
Channel-I
Producer - Village trader - Wholesaler – Retailer- Consumer

Channel-II: Producer - Wholesaler--Retailer – Consumer

Table 1: Different farm size in the marketing channel

Marketing channel	Farm size			
	Small	Medium	Large	Total
Producer-Village-Wholesaler-Retailer-Consumer	8 (32.00)	11 (33.33)	5 (15.625)	24 (26.66)
Producer-Wholesaler-Retailer-Consumer	17 (68.00)	22 (66.66)	27 (84.37)	66 (73.33)
Total	25	33	32	90

Village Sale (Producer-Village trader-Wholesaler-Retailer- Consumer)
Out of the 90 sampled farmers, 24 farmers (26.66%) offered (Sold) the pearl millet of their own village none of the large sized farmer offered pearl millet within side the village. 8 farmer (32.00%) of small sized groups, 11 farmer (33.33%) of medium farmer and 5 farmer (15.625%) of large farmers offered pearl millet within side the village [2].

Mandi sale (Producer-Wholesaler-Retailer-Consumer)
Morena markets were one of the main markets of the Morena district for transaction of pearl millet. Morena markets stand first among the important mandies of Madhya Pradesh for pearl millet arrivals. Out of 90 sampled farmers, 66 (73.33%) brought pearl millet in the Morena markets. Only 68.00 per cent small farmer brought the produce to the mandi followed by 66.66 per cent by medium farmer and 84.37 per cent large farmers brought in mandi. No definite trend in mandi sale was observed with respect to the size of holding.

Marketing costs
Following kinds of marketing, costs were incurred by different agencies including producer farmers engaged in the marketing of barley in the study area. The details of the charges are shown in the table.

(i) Transportation charges
The cost of transportation was one of the major components of the marketing costs. This cost varies with the distance between producing point and the selling point. In the case of channel I (Table), they sold their produce to village traders at their shop who transported it to the mandi for sale through the channel I starts from here channel I
Transportation cost incurred by commission agent was 22 Rs/ quintal (21.35 percent) of total market cost and further transportation cost incurred by wholesaler reported as 25 Rs/ quintal (16.55 percent) of wholesaler's market cost and the transportation cost incurred by Retailer was 13 Rs/quintal (10.55 percent). Hence in overall transportation cost per quintal in the channel, I was reported to be 60.00Rs/quintal. Channel II; In channel II transportation price incurred via way of means of manufacturer became 20.00Rs/quintal (36.36 percentage) and the transportation price incurred via way of means of wholesaler became stated as 15.00 Rs (10.06 percentage of wholesaler's transportation price) and similarly transportation price incurred via way of means of store became 12.00 Rs/quintal. Overall transportation price according to quintal in channel II became calculated as the general transportation price according to quintal in channel II became calculated as 47.00Rs/quintal. It can be concluded from the above results that transportation cost incurred in channel I was higher than the channel II as the marketing intermediaries in the channel I was more than in channel II.

(II) Loading and unloading costs: It is the payment made to the laborers for rendering services of loading & unloading of produce. In the case of channels I and II the common loading and unloading cost spread way of means of the village traders, wholesalers, and shops had been 7.00 Rs/quintal weighing costs had been paid 3.0Rs /quintal.

Cost of marketing pearl millet using Identified marketing channels and price spread
The difference between the price paid by the customer and the price received by the producer is known as the price spread. It

comprises details of various marketing costs as well as margins of profit taken by intermediaries present in the identified marketing channels at subsequent stages in the marketing of pearl millet in the study area. The price spread was worked out presented in the table. It may be observed from the table the per quintal price received by the pearl millet producer was Rs; 1185.00 and 1200.00 Rs in the channel I and II which accounted for 75.43 and 77.97 percent in the price paid by consumers in the market and percent were observed by the various intermediaries present in the respective channels. The highest share in the consumer's rupee in channel III was mainly due to the wholesaler directly sale the product to the retailer and sale in the local market because no processing charges were charged and other marketing costs such as transportation, loading and unloading, and other costs involved in marketing is very low [3].

Marketing costs, margins, and price spread
The difference between the price paid by the final consumer and the price received by the producer farmer for an equivalent quantity of farm produce is referred to as the price spread. It is often known as farm retail spread or price spread. It includes the costs incurred in moving the product from the point of production to the point of consumption and profits realized in that process by different market functionaries involved in the marketing of the product. The overall efficiency of the marketing system is judged by the extent of price spread. Price spread in pearl millet in both the marketing channels is discussed below:

Price spread in marketing of pearl millet in channel-I (Producer -Village Trader -Wholesaler - Retailer)
The price spread in marketing of pearl millet by the producer farmer at village level to the village trader and then to the wholesaler and retailer are presented in the table number 2. The producer's net share in consumers rupee in the sale of pearl millet through the channel-I was Rs 1175.00 (74.79 per cent). In this channel the village traders purchased pearl millet from the producer-farmers at their own shop on an average price of 1195.00 Rs per quintal. The village traders took it to the Krishi Upaj Mandi Morena and sold to the wholesaler through the commission agents at on average price of 1348.00Rs per quintal. In this channel of sale the producer farmers and the village traders incurred on an average Rs 10.00 and Rs 53.00 per quintal as expenses, respectively. The village traders got a net margin of 50.00 Rs per quintal. This accounted for 3.18 Rs per cent of the consumer's price. Wholesalers purchased pearl millet an average price of 1348.00Rs per quintal and sold it to the retailer at 1499.00Rs per quintals. The margin of wholesalers in this process was 65.00Rs per quintal of pearl millet. Retailer purchased pearl millet at an average price of 1101.88 Rs per quintal and sold it to the consumer at 1621.00 Rs per quintals. The margin of retailer in this process was 90.00 Rs per quintal. Among the three market functionaries present in channel I retailers got the maximum margin due to sale of pearl millet at high prices to the consumers in small quantity. The total marketing costs incurred by various intermediaries constituted 28.52 Rs per cent of the consumer's price. The price spread in this channel was 386.00Rs. Small producer farmers preferred to sell pearl millet in village to the village traders because of their poor economic condition as well as small quantity of produce available with them [4].

Price spread in marketing of pearl millet in channel-II

(Producer -Wholesaler -Retailer)

The price spread in marketing of pearl millet in channel-II is presented in Table. In this channel; producer-farmers directly sold the produce in the Morena mandi to the wholesalers through commission agents. The producer's net share in consumer's rupee in the sale of pearl millet through the channel-II was Rs 1200.00 (77.97 per cent). The producer farmer cost incurred by the producer farmer was on an average Rs 55.00per quintal of pearl millet before selling it to the wholesaler at an average price of Rs 1255.00 per quintal. In this channel the producer farmers and the wholesaler incurred on an average Rs 55.00 and Rs 84.00 per quintal as expenses, respectively. The wholesaler got a net margin of Rs 65.00 per quintal. This accounted for Rs 4.22 per cent of the consumer's price. Retailer purchased pearl millet an average price of Rs 1469.00 per quintal and sold it to the consumers at Rs 1539.00 per quintals. The margin of retailer in this process was Rs 90.00 per quintal. Among the two market functionaries present in channel-II retailers got the maximum margin by the sale of pearl millet at high prices to the consumers in small quantity. The total marketing costs incurred by various intermediaries constituted Rs 11.96 per cent of the consumer's price. The price spread in this channel was Rs 339.00.

Table 2: Cost of marketing pearl millet using Indentified marketing channels and price spread (Rs/qtl)

Particulars	Channel I		Channel II	
	Cost	%	Cost	%
Net price received by the producer	1185.00	74.79	1200.00	77.97
The cost incurred by the producer				
Loading and Unloading cost	-	-	7	12.72
Weighing	-	-	3	5.45
Mandi fee	-	-	-	-
Commission	-	-	-	-
Value of quantity loss	-	-	6	10.90
Miscellaneous	-	-	7	12.72
Transportation	-	-	20	36.36
Gunny bags	-	-	12	21.81
Labour charge	10.00	8.19		
Total	10.00	8.19	55.00	3.57
Marketing margin				
Total cost	10.00	100.00	55.00	100.00
Producer Sale price/commission agent's purchase price (Village trader)	1195.00	76.06	-	-
Transportation	22	21.35	-	-
Loading and Unloading cost	7	6.79	-	-
Gunny bags and labor cost	10	9.70	-	-
Commission	-	-	-	-
Value of quantity loss	5	4.85	-	-
Miscellaneous	6	5.82	-	-
Mandi tax @ 1.6%	-	-	-	-
Weighing	3	2.91	-	-
Total	53.00	51.45	-	-
Net margin of village trader	50.00	48.54	-	-
Total cost	103.00	100.00	-	-
The sale price of producers/purchase price of wholesaler	1298.00		1255.00	
Mandi tax @ 1.6%	5	3.31	5	3.35
Weighing @ 0.10 / qtl	3	1.98	3	2.01
Commission	22	14.56	22	14.76
Cost of gunny bag and labor cost	8	5.29	12	8.05
Value of quantity loss	8	5.29	10	6.71
Miscellaneous	8	5.29	10	6.71
Loading and Unloading cost	7	4.63	7	4.69
Transportation	25	16.55	15	10.06
Sale tax @ 1%	-	-		
Cost	86.00	56.95	84.00	56.37
Net margin of wholesaler	65.00	43.03	65.00	43.62
Total cost	151.00	100.00	149.00	100.00
The sale price of miller /purchase price of Retailer	1449.00		1404.00	
Loading and Unloading cost	7	5.73	7	5.18
Weighing	3	2.45	3	2.22
Transportation	13	10.65	12	8.88
Mandi fee	-	-	-	-
Cost of gunny bag and labor cost	-	-	10	7.40
Value of quantity loss	5	4.09	7	5.18
Commission	-	-	-	-
Miscellaneous	4	3.27	6	4.44
Total	32.00	26.22	45.00	33.33
Net margin of Retailer	90.00	73.77	90.00	66.66
Total cost	122.00	99.99	135.00	99.99
Retailer selling price/Consumer's purchase price	1571.00	100.00	1539.00	100.00

Table 3: Price spread in marketing of pearl millet in channel-I in Morena in Rs/Qtl

Particulars	Rs/quintal	Share in consumer's (in percentage)
Producer's share	1185	75.43
Cost incurred by		
(a)- Producer	10	0.64
village trader purchase price	1195	
(b)- Village trader	53	12.59
whole seller purchase price	1298	
©- Wholesaler	86	5.47
Retailer purchase price	1449	
(d)- Retailer	32	7.60
total marketing cost	181	
Margin earned by		
(a) Village trader	50	3.18
(b)-Wholesaler	65	4.14
©- Retailer	90	5.73
Total marketing margin	205	13.05
Consumer's price	1571	100
Price spread	386	
Efficiency	3.06	

Table 4: Price spread in the marketing of pearl millet in channel-II in Moreno Mandi

Particulars	Rs/quintal	Share in consumer's (in percentage)
Producer's share	1200	77.97
Cost incurred by		
a) Producer	55	3.57
wholesale purchase price	1255	
b) Wholesaler	84	5.46
Retailer purchase price	1404	
c) Retailer	45	2.92
Total Marketing cost	184	11.96
Margin earned by		
Wholesaler	65	4.22
Retailer	90	5.85
Total margin	155	10.01
Consumer's price	1539	100.00
Price spread	339	22.03
Efficiency	3.55	

Index of marketing efficiency in the identified marketing channels of pearl millet: It may be observed from the table that marketing efficiency for marketing channels I and II was 3.06 percent and 3.55 percent respectively. The index of marketing efficiency was more in channel II than I indicating relatively higher marketing efficiency in this channel. It was observed that the higher proportion of pearl millet produced in the fact the gram growers mainly it convenient to sale their produce to village trader. Moreover, higher cost and lower efficiency of the channel I were also because it included various costs and margins incurred at Morena market.

Conclusions
Under channel I- out of the 90 sampled farmers, 26.66% offered (sold) the pearl millet of their own village. In case of channel II 73.33% farmers sold their produce in the Morena Krishi Upaj Mandi. The index of marketing efficiency in channel II was greater as compared to channels I. which indicating that channel- I has a higher marketing efficiency than any other channel.

Suggestions for further work
▪ At the village level, more storage facilities should be provided.
▪ Farmers can avail the facilities to market their produce direct to the government agencies to get better return of produce.
▪ More storage facilities should be constructed at the village level.
▪ The malpractices in the market should also be checked so that the farmers get a fair price of the commodity.
▪ There is need to establish sound market intelligence system by the government so that the farmers can sell their produce in those markets where prices are favorable.

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