MARKETING EFFICIENCY OF MILK AND MILK PRODUCTS IN PRAKASAM DISTRICT OF ANDHRA PRADESH, INDIA

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ABSTRACT

The study was conducted to know the marketing efficiency of milk and milk products of co-operative and non-cooperative sectors in Prakasam district of Andhra Pradesh. Primary& secondary data was collected from the 4 marketing channels (cooperative society i.e. Ongole dairy, non-cooperative dairies - traditional, private and milk collection centres). It has been found that price spread of milk was highest in case of channel 3 and minimum price spread was found in channel 4. Highest marketing efficiency of milk was observed in case of channel 4 and channel 6 was the most efficient channel for curd. In case of butter milk highest marketing efficiency and the lowest price spread was observed in non-cooperative channel 4. Marketing efficiency of ghee was more in case of channel 1 followed by channel 3 and 2. Findings of the study showed that marketing efficiency of cooperative dairy plant has been observed relatively less than private dairy plants and marketing efficiency of private channels was found to be more than cooperative channel but traditional channel was more efficient than private channel. From the findings of the study the following implications were drawn. Monthly payment should be made regular and price given to dairy farmers should be increased by cooperative society so that the dairy farmers preferring to this channel will be increased more than at present. The dairy plants should lower the sales commission being paid to commission agents, wholesalers, retailers and other selling agents to reduce distribution cost.

Key Words: Marketing efficiency, milk and milk products, marketing channel, price spread, marketing margin and marketing cost.

INTRODUCTION

In India, the marketing of milk and milk products is dominated by the unorganized sector, and the organized sector handles only about 14 per cent of total milk production[1]. Dairy co-operatives play a major role in dairy development and considered as one of the vital channels to improve milk production and reduce the cost of procurement, processing and marketing of dairy plants are facing

cut-throat competition from the private players for market share. The marketing efficiency and success of a dairy plant largely depends on effective management of operations from producer to consumer. If the cost of marketing is minimum, this ensures the largest share of producer in the consumer rupee that can be observed in efficient marketing system. At the same time more consumers' satisfaction with quality of product at reasonable price. An efficient marketing system also influences the producers' decision to invest resources in a particular economic activity in a particular time period. Therefore the analysis of milk marketing channels, marketing costs and the margins of middleman are essential for dairy development at the micro level and in formulating plans for improvements in the dairy sector through higher value addition and increased employment generation in agriculture, based on sound economic principles, at the macro level. Thus, marketing of dairy products plays a very important role in the dairy development and drawn attention of policymakers, planners and researchers. The analysis of marketing costs and margins of dairy plants would help in reducing the unwarranted costs in marketing of dairy products. By keeping all these things in mind, the present study was conducted to compare the marketing costs, margins and marketing efficiency of milk and milk products for different marketing channels.

MATERIAL AND METHODS

The study was conducted in Prakasam district of Andhra Pradesh. Multistage sampling technique was used for this study. In the first stage Prakasam district of Andhra Pradesh was purposively selected based on the criteria of highest milk production (0.873 Mt) during the year 2014-15 [2]. Four mandals from total mandals of Prakasam district and two villages from each mandal were selected purposively based on their highest milk production making a total of eight villages. A total of eighty farmers from each village were selected out of which, twenty farmers selling milk to cooperative society i.e. Ongole dairy identified in the district and remaining sixty farmers to non-cooperative dairies which includes traditional, private and milk collection centres were selected by using simple random sampling technique. Primary data was collected from dairy farmers, milk collection units, cooperative society and private dairies with the help of structured interview schedule. The data was obtained from the selected respondents, then coded, classified and tabulated. Finally marketing costs, marketing margin, price spread were calculated. For calculating marketing efficiency, Acharya's approach method was used which is an ideal measure for marketing efficiency[3].

Acharya Approach of Marketing Efficiency

According to Acharya, an ideal measure of marketing efficiency, particularly for comparing the efficiency of alternate markets/cannels, should account all the following:

a) Total marketing costs (MC)

b) Net marketing margins (MM)

c) Prices received by the farmer (FP)

d) Prices paid by the consumer (RP)

1) Higher the MC, lower the efficiency

2) Higher the MM, lower the efficiency

3) Higher the FP, higher the efficiency

4) Higher the RP, lower the efficiency

The following modified measure is, therefore, being suggested by Acharya:-

$MME = FP \div (MC + MM)$

Where MME is the modified measure of marketing efficiency.

RESULTS AND DISCUSSION

Marketing Efficiency of all Identified Supply Chains for Milk and Milk Products

In Prakasam district, both cooperative and non-cooperative dairies were identified from which seven channels were developed including traditional channel. Milk has been supplied through all the channels that are identified whereas for milk products, traditional channel did not exist in the sample area. In the channels identified, there was one cooperative society i.e. Ongole dairy which plays a major role in marketing of milk and milk products mainly in Prakasam district. Wholesalers are the one who purchase milk or milk products directly from cooperative and non-cooperative dairies and sell the produce to either retailers or consumers. There are some wholesalers like cooperative society, private dairies and MCC who make different milk products like curd, butter milk and ghee and sell them to other wholesalers or retailers or directly to consumers. Retailers are those who purchase the produce and sell them to consumers. In one of the non-cooperative channel, there exists only two members i.e. producers and consumers in traditional channel (channel 4). In channel one, two, and three, Ongole dairy was the major wholesaler selling milk and their milk products to other wholesalers, retailers and consumers. Private dairy was the other major stakeholder playing the role of wholesaler in channels five and six. As observed in channel seven, there is also milk collection

centers setup by a single farmer where milk was collected from different dairy farmers in the surrounding areas.

Marketing channels for milk and milk products like curd, buttermilk and ghee were identified and price per litre at different stages in the channels were represented in Tables 1, 3, 5, and 7. For all the identified marketing channels, price spread was worked out to estimate producers share in consumer's rupee for milk and milk products.

Marketing Efficiency of Milk

From the Table 2 it was evident that producer's share in consumer's rupee was highest in case of channel 4 i.e. producers who sold their milk directly to consumers received maximum price (Rs. 47.30) followed by private dairies (Rs. 41.77), MCCs (Rs. 40.95) and Ongole dairy (Rs. 39.85). Producer's share in consumer's rupee was 100 per cent in non-cooperative channel i.e. traditional channel as there were no intermediaries [4, 5, 6,]. It was found that highest price spread was observed in case of channel 3 where the channel includes more number of intermediaries who incurred some costs and retained some portion of the profit which added to the inflated price spreads. Minimum price spread was found in channel 4 as there were no intermediaries between the producer and consumer. Channel 4 was found to be the efficient channel with highest marketing efficiency. In this study, marketing efficiency of private channels was found to be more than cooperative channel but traditional channel was more efficient than private channel [7].

Marketing Efficiency of Curd

From Table 4 it was observed that channel 6 was the most efficient channel in curd i.e. marketing through milk collection centers. Price spread was also observed lowest in case of channel 6 followed by channel 4 i.e. through private dairies without intermediaries. Channels with no or less intermediaries found to have higher marketing efficiency and lower price spread. Producers share in consumer's rupee found to be the highest in channel 6 where curd was marketed through milk collection centres, producers' price was maximum when curd was sold to private dairies compared to Ongole dairy and milk collection centres (MCC).

Marketing Efficiency of Butter Milk

From the Table 6 it was revealed that the highest marketing efficiency and the lowest price spread were observed in one of the non-cooperative channel 4 i.e. marketing butter milk through private dairies directly to consumers without the presence of intermediaries. This was followed by

milk collection centers with next highest marketing efficiency and next lowest price spread. Producers who sold their butter milk to private dairies procured more price as compared to other marketing channels. The percentage share in consumer's rupee was reasonably higher if the producers were selling to the cooperative society and the consumers also had to pay less price if they purchased from cooperative society.

Marketing Efficiency of Ghee

From the Table 6 it was revealed that marketing of ghee does not take place through cooperative channel; only non-cooperative channels were involved in marketing of ghee. Marketing efficiency of ghee was more in case of channel 1followed by channel 3 and 2. Channel 2 found to have the highest price spread followed by channel 3 and 1. Producer's share in consumer rupee was highest in case of channel 1 because of the absence of intermediaries between the private dairy and the consumer and hence the channel having the highest marketing efficiency.

CONCLUSION

From the results of study it can be concluded that channel 4 was found to be more efficient channel with highest marketing efficiency in case of milk. For curd, highest marketing efficiency was found in channel 6. Channel 4 had the highest marketing efficiency in case of buttermilk and Channel 1 had the highest marketing efficiency in case of ghee. Overall marketing efficiency was shown more in case of private dairies whereas marketing of dairy products directly to consumers. Even though dairy farmers preferring the cooperative channel because of that channel is providing training facilities, supplying feed and fodder on credit basis which were more important to farmers rather than price. Milk price, distance and training facilities were considered as the most important factors which influence the dairy farmers to choose better marketing channel. From the findings of the study the following implications were drawn. Monthly payment should be made regular and price given to dairy farmers should be increased by cooperative society so that the dairy farmers preferring to this channel will be increased more than at present. The dairy plants should lower the sales commission being paid to commission agents, wholesalers, retailers and other selling agents to reduce distribution cost.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Table 1: Price spread of milk (Rs./l) in different marketing channels in Prakasam district

Particulars	Cooperative channel			Non-cooperative channel			
	F-Ongole dairy (1)	F-Ongole dairy (2)	F-Ongole dairy (3)	F-C (4)	F-Private (5)	F-Private (6)	F-MCC (7)
Producer							
Cost of Production	36.80	36.80	36.80	38.32	37.69	37.69	35.70
Profits	3.05	3.05	3.05	8.98	4.08	4.08	5.25
Price Received	39.85	39.85	39.85	47.30	41.77	41.77	40.95

Ongole dairy							
Marketing Cost	7.80	7.80	7.80	-	-	-	-
Profits	2.35	2.35	2.35	-	-	-	-
Price Received	50.00	50.00	50.00	-	-	-	-
Private							
Marketing Cost	-	-	-	-	4.63	4.63	-
Profits	-	-	-	-	5.60	5.60	-
Price Received	-	-	-	-	52.00	52.00	-
Milk collection centre							
Marketing Cost	-	-	-	-	-	-	5.17
Profits	-	-	-	-	-	-	4.88
Price Received	-	-	-	-	-	-	50.00
Wholesaler							
Marketing Cost	-	0.60	0.60	-	-	0.30	-
Profits	-	1.40	1.40	-	-	1.70	-
Price Received	-	52.00	52.00	-	-	54.00	-
Retailer							
Marketing Cost	-	-	0.20	-	-	-	-
Profits	-	-	1.80	-	-	-	-
Price Received	-	-	54.00	-	-	-	-
Price Paid by Consumer	50.00	52.00	54.00	47.30	52.00	54.00	50.00
***F-C: Farmers to consumers, MCC-milk collection centers**							

Table 2: Over view of price spread of milk (Rs. per liter) in different channels

Particulars	Channels						
	Cooperative			Non-cooperative			
	1	2	3	4	5	6	7
Marketing Cost (Rs.)	7.80	8.40	8.60	0	4.63	4.93	5.17
Marketing Margin(MM) (Rs.)	2.35	3.75	5.55	8.98	5.60	7.30	4.88
Price Spread	10.15	12.15	14.15	0	10.23	12.23	9.05
Producer's price(Rs.)	39.85	39.85	39.85	47.30	41.77	41.77	40.95
Consumer's price(Rs.)	50.00	52.00	54.00	47.30	52.00	54.00	50.00
Producer's Share In Consumer Price (%)	79.70	76.63	73.79	100	80.32	77.35	81.90
MM In Consumer Price (%)	4.70	7.21	10.27	18.98	10.76	13.51	9.76
Marketing Efficiency(MME) (Acharya's approach)	4.92	4.27	3.81	5.26	5.08	4.41	4.97

Table 3: Price spread of curd in different channels in Prakasam district (Rs./liter)

Particulars	Cooperative channel			Non-cooperative channel		
	F-Ongole dairy (1)	F-Ongole dairy (2)	F-Ongole dairy (3)	F-private (4)	F-private (5)	F-MCC (6)
Producer						
Cost of Production	36.80	36.80	36.80	37.69	37.69	35.70
Profits	3.05	3.05	3.05	4.08	4.08	5.25

Price Received	39.85	39.85	39.85	41.77	41.77	40.95
Ongole Dairy						
Marketing Cost	9.42	9.42	9.42	-	-	-
Profits	0.23	0.23	0.23	-	-	-
Price Received	49.50	49.50	49.50	-	-	-
Private Dairy						
Marketing Cost	-	-	-	7.68	7.68	-
Profits	-	-	-	0.75	0.75	-
Price Received	-	-	-	50.20	50.20	-
Milk Collection Centre						
Marketing Cost	-	-	-	-	-	3.52
Profits	-	-	-	-	-	4.23
Price Received	-	-	-	-	-	48.70
Wholesaler						
Marketing Cost	-	0.60	0.60	-	0.30	-
Profits	-	1.70	1.70	-	1.10	-
Price Received	-	51.80	51.80	-	51.60	-
Retailer						
Marketing Cost	-	-	0.10	-	-	-
Profits	-	-	0.10	-	-	-
Price Received	-	-	52.00	-	-	-
Price Paid by Consumer	49.50	51.80	52.00	50.20	51.60	48.70
***F-C: Farmers to consumers, MCC-milk collection centres**						

Table 4: Over view of price spread of curd (Rs. Per liter)

Particulars	Channels					
	Cooperative			Non-cooperative		
	1	2	3	4	5	6
Marketing Cost (Rs.)	9.42	11.02	10.02	4.63	7.98	3.52
Marketing Margin(MM) (Rs.)	0.23	0.93	2.03	5.6	1.85	4.23
Price Spread	9.65	11.95	12.15	8.43	9.83	7.75
Producer's price(Rs.)	39.85	39.85	39.85	41.77	41.77	40.95
Consumer's price(Rs.)	49.50	51.80	52.00	50.20	51.60	48.70
Producer's Share in Consumer Price (%)	80.50	76.93	76.63	83.20	80.94	84.08
MM in Consumer Price (%)	0.46	1.79	3.90	11.15	3.58	8.68
Marketing Efficiency(MME) (Acharya's approach)	5.12	4.33	4.31	4.90	5.24	6.28

Table 5: Price spread of buttermilk in different channels in Prakasam district (Rs. Per liter)

Particulars	Cooperative channel			Non-cooperative channel		
	F-Ongole dairy (1)	F-Ongole dairy (2)	F-Ongole dairy (3)	F-Private (4)	F-Private (5)	F-MCC (6)
Producer						
Cost of Production	28.30	28.30	28.30	29.60	29.60	29.80
Profits	0.96	0.96	0.96	2.90	2.90	0.40
Price Received	29.26	29.26	29.26	32.50	32.50	30.20

Ongole dairy						
Marketing Cost	2.80	2.80	2.80	-	-	-
Profits	2.94	2.94	2.94	-	-	-
Price Received	35.00	35.00	35.00	-	-	-
Private						
Marketing Cost	-	-	-	2.30	2.30	-
Profits	-	-	-	3.20	3.20	-
Price Received	-	-	-	38.00	38.00	-
Milk collection centre						
Marketing Cost	-	-	-	-	-	2.10
Profits	-	-	-	-	-	3.70
Price Received	-	-	-	-	-	36.00
Wholesaler						
Marketing Cost	-	1.40	1.40	-	0.80	-
Profits	-	1.80	1.80	-	1.20	-
Price Received	-	38.20	38.20	-	40.00	-
Retailer						
Marketing Cost	-	-	1.20	-	-	-
Profits	-	-	0.60	-	-	-
Price Received	-	-	40.00	-	-	-
Price Paid by Consumer	35.00	38.20	40.00	38.00	40.00	36.00
***MCC-milk collection centers**						

Table 6. Over view of price spread of butter milk (Rs. Per litre)

Particulars	Channels					
	Cooperative			Non-cooperative		
	1	2	3	4	5	6
Marketing Cost (Rs.)	2.94	4.20	5.40	2.30	3.10	2.10
Marketing Margin(MM) (Rs.)	2.94	4.74	5.34	3.20	4.40	3.70
Price Spread	5.74	8.94	10.74	5.50	7.50	5.80
Producer's price (Rs.)	29.26	29.26	29.26	32.50	32.50	30.20
Consumer's price (Rs.)	35.00	38.20	40.00	38.00	40.00	36.00
Producer's Share in Consumer Price (%)	83.60	76.59	73.15	85.52	81.25	83.88
MM In Consumer Price (%)	8.40	12.40	13.35	8.42	11.00	10.27
Marketing Efficiency (MME) (Acharya's approach)	4.97	3.27	2.72	5.90	4.33	5.20

Table 7: Price spread of ghee in different non-cooperative channels in the Prakasam district (Rs./kg)

Particulars	F-Private (1)	F-Private (2)	F-MCC (3)
Producer			
Cost of Production	300.56	300.56	292.14
Profits	25.33	25.33	22.51
Price Received	325.89	325.89	314.65
Private Dairy			

Marketing Cost	50.35	50.35	-
Profits	23.76	23.76	-
Price Received	400.00	400.00	-
Milk Collection Centre			
Marketing Cost	-	-	50.68
Profits	-	-	34.67
Price Received	-	-	400.00
Wholesaler			
Marketing Cost	-	1.23	-
Profits	-	18.77	-
Price Received	-	420.00	-
Price Paid by Consumer	400.00	420.00	400.00
***MCC-milk collection centres**			

Table 8: Over view of price spread of ghee (Rs./kg)

Particulars	**Non-cooperative channels**		
	1	**2**	**3**
Marketing Cost (Rs.)	50.35	51.58	50.68
Marketing Margin(MM) (Rs.)	23.76	42.53	34.67
Price Spread	74.11	94.11	85.35
Producer’s price (Rs.)	325.89	325.89	314.65
Consumer’s price (Rs.)	400.00	420.00	400.00
Producer's Share in Consumer Price (%)	81.47	77.59	78.66

MM In Consumer Price (%)	5.94	10.12	8.66
Marketing Efficiency (MME) (Acharya's approach)	4.39	3.46	3.68