Research Note

Indian Journal of Extension Education
Vol. 60, No. 2 (April–June), 2024, (105-108)

ISSN 0537-1996 (Print)
ISSN 2454-552X (Online)

Analyzing Factors Influencing Milk Marketing Channel Strategies in Punjab

Napinder Kaur[1]* and Jasdeep Singh Toor[2]

[1]Lovely Professional University, Phagwara-144411, Punjab, India
[2]Punjabi University, Patiala-147002, Punjab, India
*Corresponding author email id: kaleronenapinder@gmail.com

ARTICLE INFO

Keywords: Dairy, Henry Garrett's ranking Technique, Livestock, Marketing channel, Milk price

https://doi.org/10.48165/IJEE.2024.602RN3

Conflict of Interest: None

Research ethics statement(s): Informed consent of the participants

ABSTRACT

Raising livestock has long been regarded as an important activity in the nation's rural areas. The Indian dairy industry has undergone noteworthy changes with the tremendous increase in the production of milk. The provision of assured marketing channels is crucial for dairy farmers to reap the economic benefits of milk production. The present study aims to examine the drivers behind the dairy farmers' decisions about milk marketing channels in Punjab. The primary data used in this study has been collected from 21 villages and 420 dairy farmers using a multistage sampling technique in 2019, belonging to three different zones of the state. Henry Garrett's Ranking Technique was used to determine the significant factors influencing their choice of milk marketing channels. Higher milk price, with a mean value of 71.64, is found to be the main driver for choosing the milk marketing channel, followed by doorstep collection with a mean value of 56.70, and provision of advances with a mean value of 54.55. There is a need to strengthen the dairy cooperatives to reduce the involvement of the unorganized sector in the marketing of milk in the state of Punjab.

INTRODUCTION

Dairy enterprise has been considered as the fortune of the Indian rural economy. Millions of resource-poor farmers are involved in this sector (Das et al., 2020); animal ownership has guaranteed them a vital means of subsistence, financial security and sustainable farming. The agricultural system is closely linked with the livestock sector (Radhakrishnan & Gupta, 2017). Most of the small farmers and those without land have relied on the income from raising livestock (Arora et al., 2023). Approximately 88 per cent of the livestock is owned by families with sizes of less than 4 hectares (Annual Report, GoI, 2020). The livestock sector's contribution to the total agriculture and allied Gross Value Added (GVA) at constant prices has increased from 24.32 per cent in 2014-2015 to 28.63 per cent in 2018-2019 in India. The contribution of the livestock sector alone is 4.2 per cent of the GVA in 2018-2019 (Economic Survey of India, GoI, 2021).

The Indian dairy industry has undergone noteworthy changes with the tremendous increase in the production of milk. There are two factors contributing to the increase in the production of milk: population growth of dairy animals and improved productivity per dairy animal (Annual Report, GoI, 2020). Punjab produced 13347 thousand tonnes of milk in 2019–2020, with an annual growth rate of about 5.60 per cent. Over the years, Punjab's increased milk production has resulted in a notable increase in the per capita availability of milk. Per capita milk availability in the state reached 1225 grams per day in 2019-2020 at a growth rate of 3.73 per cent per annum (Statistical Abstract of Punjab, GoP, 2020). Urban areas experiencing a rise in milk demand and rural areas having many milk producers attracted various organized and unorganized players in the milk industry. The unorganized sector includes wholesalers, sweet shops, milk vendors, and producers themselves and the organized sector includes private and cooperative dairies (Makarabbi et al., 2023). These players are involved in the activities of procuring, processing, and distributing milk (Brar et al., 2018). The provision of assured marketing channels is crucial for dairy farmers to reap the economic benefits of milk production

Received 11-03-2024; Accepted 30-03-2024

by offering them remunerative prices (Mohapatra et al., 2022). Dairy cooperatives play a crucial role in the organized milk marketing system of the nation. However, there have not been any major changes in the average size and scale of village-level dairy cooperatives (Bardhan & Tewari, 2007). The objective of this study is to examine the factors that affect the selection of milk marketing channels among dairy farmers in Punjab.

METHODOLOGY

This study is conducted in the Punjab state of India and relies on primary data gathered in 2019. The sample was selected using a five-stage stratified sampling technique. The state of Punjab has been chosen for sampling in the initial stage due to the significant role of dairying in an agricultural-dominated state. For the second phase, three districts have been chosen based on their milk production. One district has been selected from each category of high, medium, and low milk production districts. Gurdaspur district has been chosen as a representative of high milk production districts, Mansa as a representative of medium milk production districts, and S.B.S. Nagar as a representative of low milk production districts, based on milk production criteria. The three districts, Gurdaspur, Mansa, and S.B.S. Nagar, align with the three agro-climatic regions of Punjab viz.- Shivalik Foothills Zone, South-West Dry Zone and Central Plains Zone, respectively. Furthermore, the three chosen districts correspond to the three regions of Punjab, namely Majha (Gurdaspur), Malwa (Mansa) & Doaba (S.B.S. Nagar).

All development blocks from the selected districts have been chosen in the third stage of sampling. Therefore, a total of twenty-one development blocks have been chosen for the survey. The development blocks consist of eleven from Gurdaspur, five from Mansa, and the rest from SBS Nagar. In the fourth stage of sampling, villages are chosen. One village from each development block of each selected district has been selected. The villages have been selected in such a way that they have a similar livestock economy and the presence of marketing channels (either organized or unorganized). A total of twenty-one villages, one selected from each block, have been designated for the study. These comprise eleven villages from Gurdaspur, five from Mansa, and five villages from SBS Nagar. In the fifth phase of sampling, a thorough list of households involved in dairying was created based on the twenty-one villages that were chosen. The households were subsequently categorized into five distinct groups: landless households, marginal farmers, small farmers, medium farmers, and large farmers. A total of four dairy farm households have been randomly selected from each category within the chosen villages. Consequently, a total of 420 dairy farm households have been selected from various villages by choosing a sample of twenty dairy farmers from each village. Henry Garrett's Ranking Technique is used for analyzing the drivers behind the selection of milk distribution channels. The factor having the highest mean score is the most important factor affecting the choices of milk marketing channels (Geetha & Prabhu, 2020).

RESULTS

Four marketing channels were found working in the study area: Producer Consumer, Producer- Milk Vendor- Consumer, Producer- Cooperative Dairies- Consumer and Producer- Private Dairies-Consumer. Channels I and II are covered under unorganized milk marketing channels and channels III and IV are under organized milk marketing channels. The same milk channels have been identified by Brar et al., (2017) in Punjab. The major patterns for the disposal of milk are shown in Table 1 and these are milk vendors, cooperative dairies, private dairies, and direct consumers. Out of all, 170 (40.48%) milk producers directly dispose of the surplus quantity of milk directly to the consumers, followed by 151 (35.95%) to private dairies, 75 (17.86%) to cooperative dairies, and the remaining 24 (5.71%) to milk vendors. These findings are in line with the study of Baindha et al., (2017), in which they have shown that most dairy farmers are selling milk directly either to consumers or to retailers in Haryana.

Factors affecting the choice of milk marketing channels

For the study of milk marketing channels, seven factors have been identified that are relevant to dairy farmers. These factors are higher milk prices, less fluctuations in prices, doorstep collection, advance, veterinary services, dairy inputs at cheaper rates, and helps in getting loans and subsidies. The number of respondents ranks the factors as 1 to 7 to show their preferences for the drivers behind the choice of milk marketing channels. The doorstep collection is ranked first, second, third, fourth, fifth, sixth, and

Table 2. Percentile position of ranks and respective Garrett Score

Rank	Percentile Position	Garrett Score
1	7.14	79
2	21.43	66
3	35.71	57
4	50.00	50
5	64.29	43
6	78.57	34
7	92.86	21

Table 1. Disposal pattern of milk

District	Disposal pattern of milk								Total
	Milk Vendors		Cooperative Dairies		Private Dairies		Consumer		
	No.	%	No.	%	No.	%	No.	%	
Gurdaspur	12	5.45	55	25	79	35.91	74	33.64	220
SBS Nagar	6	6.00	5	5	23	23.00	66	66.00	100
Mansa	6	6.00	15	15	49	49.00	30	30.00	100
Sampled	24	5.71	75	17.86	151	35.95	170	40.48	420

seventh by 83, 92, 63, 78, 51, 30 and 23 respectively. Likewise, different factors are ranked by the dairy farmers.

The computation of the Garrett Value is shown in Table 3. The total scores are determined by multiplying the number of dairy farmers who rank each factor as 1, 2, 3, 4, 5, 6, and 7 by the corresponding Garrett values. Mean scores for each factor are estimated by dividing the total score by the number of dairy farmers.

According to Garrett's Ranking technique, higher milk price is an important factor in influencing the selection of milk distribution channels by dairy farmers as it is ranked first with a mean score of 71.64 (Table 4). This finding is in line with the other studies that have also ranked the higher milk price first with a mean score of 78.35 (Brar et al., 2018). The doorstep collection is the second main determinant with a mean score of 56.70, followed by the provision of advance (54.55), less fluctuation in prices (48.99), provision of veterinary services (41.11), provision of cheaper dairy inputs (40.77) and helps in getting loans and subsidies (36.20).

Table 4. Ranking of different factors affecting the choice of milk marketing channels

Factors	Total score	Mean score	Ranks
Doorstep collection	23816	56.70	II
Helps in getting loans & subsidies	15202	36.20	VII
Higher milk price	30087	71.64	I
Less fluctuation in prices	20575	48.99	IV
Provide Advance	22909	54.55	III
Provide cheaper dairy inputs	17125	40.77	VI
Provide Veterinary Services	17266	41.11	V

DISCUSSION

There exist four marketing channels in the study area providing conflicting sets of choices to milk producers. Two marketing channels, viz. consumers and milk vendors, are covered under unorganized marketing channels and the other two, i.e. cooperative dairies and private dairies, are covered under organized marketing channels. Generally, the unorganized sector is preferred by most dairy farmers due to the reason that they purchase milk at a flat rate per liter of milk and can make daily payments to the producers as against the cooperative dairies whose purchase price of milk is based upon fat content and payments are made after the weekly or fortnightly interval. Thus, it is important to study the determinants influencing the selection of different marketing channels. Milk price is an important factor in dairying as it determines the level of profitability. Higher milk prices can ensure milk quality as well as more efforts by dairy farmers to adopt dairying as an enterprise itself. Doorstep collection is the second important factor influencing the choice of dairy farmers regarding marketing channels. Doorstep collection means a collection of milk either by the consumers or by milk vendors from milk producers' places. Doorstep collection saves the transportation cost associated with disposing of the milk to dairies situated at places which is different from the place of production. The provision of advance (making payment a few days before the sale of milk) ranks third in its impact on dairy farmers' choice of milk marketing channels. Dairy farmers need finance to manage their daily variable costs components like feed and fodder costs, labor costs, and veterinary expenses. They can afford these expenses only if they possess enough financial resources. In case of low or absence of financial resources, provision of advance by marketing channels can save the economy of dairy farmers. Less fluctuations in milk prices or stability in milk prices is ranked fourth factor affecting the preference of dairy farmers in selecting milk marketing channels. This finding contradicts the research conducted by Brar et al., (2018) which found it as the last factor influencing the dairy farmers' selection of milk marketing channels having the lowest mean score of 49.32. Less fluctuation in milk prices reduce the degree of uncertainty associated with dairy income. If milk prices are stable, dairy farmers can have an accurate computation of their dairy income and hence, they can make day-to-day and long-term decisions accordingly.

The provision of veterinary services by marketing channels is ranked in fifth place by the ranking technique in influencing the selection of milk marketing channels by dairy farmers. The milk marketing channels can play a momentous role in the development of the dairy sector by providing veterinary services, such as the provision of vaccinations, dewormers, and sometimes veterinarians to dairy farmers. The provision of dairy inputs at cheaper rates to the dairy farmers and helps in getting loans and subsidies is the least important factors in influencing the selection of milk marketing channels by the dairy farmers. These factors are ranked sixth and seventh place respectively. The marketing channels can provide various inputs to the dairy farmers, such as feed and supplements at cheaper rates, and help in getting loans and subsidies on the purchase of milch animals. There is the provision of veterinary services, dairy inputs, and extension services by organized marketing channels in Punjab (Sharma & Wadhawan, 2015).

Table 3. Computation of Garrett's Value

Factors	Rank 1*79	Rank 2*66	Rank 3*57	Rank 4*50	Rank 5*43	Rank 6*34	Rank 7*21	Total Score
Doorstep collection	6557	6072	3591	3900	2193	1020	483	23816
Helps in getting loans & subsidies	553	858	1881	2000	2924	4046	2940	15202
Higher milk price	18486	8250	2508	800	43	0	0	30087
Less fluctuation in prices	2054	3234	5985	4000	2322	1972	1008	20575
Provide Advance	4108	6336	4617	3650	2752	816	630	22909
Provide cheaper dairy inputs	1027	1782	2679	2300	3827	3536	1974	17125
Provide Veterinary Services	395	990	2907	4300	3999	2890	1785	17266

CONCLUSION

There exist four marketing channels in the study area. Among all, the most preferred marketing channel by dairy farmers is the direct sale of milk from producer to consumer, i.e. traditional milk marketing channel. The primary determinant in the selection of marketing channels by dairy farmers is the higher milk price as it is ranked first by Henry Garret's Ranking technique, followed by doorstep collection and provision of advance, less fluctuation in prices, and provision of veterinary services. The provision of dairy inputs at cheaper rates and help in getting loans and subsidies are found to be the least important factors in influencing the selection of milk marketing channels by dairy farmers in Punjab. There is a need to strengthen the dairy cooperatives to reduce the involvement of the unorganized sector in the marketing of milk in the state of Punjab.

REFERENCES

Arora, K., Kumar, S., Adhale, P., Bhoi, P. B., & Vatta, K. (2023). Addressing the impact of COVID-19 on dairy value chains: evidence from Punjab, India. *Current Science, 124*(5), 570-577.

Baindha, A., Sankhala, G., Singh, M., Kumar, A., Singh, S., & Rai, K. (2017). Product profile and marketing channels used by milk processors in Karnal district of Haryana. *Indian Journal of Extension Education*, *53*(1), 154-156.

Bardhan, D., & Tewari, S.K. (2007). Risk attitude and risk management strategies: an analysis of dairy farmers in Tarai area of Uttaranchal state. *Indian Journal of Agricultural Economics*, *62*(4), 607-622.

Brar, R. S., Kaur, I., Singh, V. P., & Chopra, S. (2017). Efficiency of milk marketing channels in small and medium sized dairy farms in Punjab. *Indian Journal of Dairy Science, 70*(6), 774-780.

Brar, R. S., Kaur, I., Singh, V. P., & Chopra, S. (2018). Analysis of factors influencing choice of milk marketing channels among small and medium dairy farmers in Punjab. *Indian Journal of Dairy Science, 71*(3), 299-305.

Brar, R. S., Kaur, I., Singh, V. P., & Kaur, N. (2018). Factors affecting choice of milk marketing channels by dairy farmers in Punjab. *Journal of Krishi Vigyan*, *6*(2), 123-129.

Das, M., Singh, R., Feroze, S. M., & Singh, S. B. (2020). Determinants of marketed surplus of milk: A microlevel study in Khasi hills region of Meghalaya. *Indian Journal of Extension Education*, *56*(2), 45-50.

Geetha, C., & Prabhu, S. M. (2020). Analysis of Garrett's Ranking for facilities of arts and engineering colleges in Salem district of Tamil Nadu. *International Journal of Advanced Science and Technology, 29*(4), 622-627.

Government of India. (2020). *Annual Report 2019-20.* Government of India, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India, New Delhi.

Government of India. (2021). *Economic Survey of India 2020-21.* Government of India, Ministry of Finance, Economic Division, Government of India, New Delhi.

Government of Punjab. (2020). *Statistical Abstract of Punjab 2020.* Government of Punjab, Economic Advisor to Government, Economic and Statistical Organisation, Chandigarh.

Kumar, A., Mishra, A. K., Parappurathu, S., & Jha, K. (2018). Farmers' choice of milk-marketing channels in India. *Economic and Political Weekly*, *53*(51), 58-67.

Kumar, A., Staal, S. J., & Singh, D. K. (2011). Smallholder dairy farmers' access to modern milk marketing chains in India. *Agricultural Economics Research Review, 24*, 243-253.

Makarabbi, G., Tuteja, F. C., Saxena, N., & Ana, R. J. (2023). Socio-economic determinants influence on NiliRavi buffalo farmers choice of milk marketing channels in Punjab. *Indian Journal of Extension Education*, *59*(1), 112-116.

Mohapatra, S., Sendhil, R., & Pabba, A. S. (2022). Analysis of dairy value chain in organized sectors of Haryana: A chain wide learning approach. *Indian Journal of Extension Education*, *58*(4), 96-101.

Radhakrishnan, A., & Gupta, J. (2017). Vulnerability of dairy-based livelihoods to climate variability and change: a study of Western Ghats region in Wayanad, Kerala. *Current Science*, *113*(1), 123-129.

Sharma, H., & Wadhawan, V. M. (2015). Livestock economy of Punjab: Need to strengthen animal health and veterinary services for sustainable development. *Indian Journal of Economics and Development*, *11*(1), 359-363.