

AN ECONOMIC ANALYSIS ON MARKETING OF AMUL MILK IN PRAYAGRAJ DISTRICT OF UTTAR PRADESH

Vishal Mishra¹ and Amit Kumar²

¹MBA (Agribusiness) and ²Sr. Assistant Professor

Department of Agricultural Economics

Sam Higginbottom University of Agriculture, Technology and Sciences, Naini, Prayagraj

Corresponding author: mishravihaan13@gmail.com

<https://doie.org/10.10346/AE.2025653309>



ABSTRACT

This study, titled "An Economic Analysis on Marketing of Amul Milk in Prayagraj District of Uttar Pradesh," aimed to analyse the economic aspects of Amul Milk marketing within the district, with a focus on Kaurihar block. Amul Milk, produced by the Gujarat Cooperative Milk Marketing Federation (GCMMF), is widely recognized for its quality, purity, and role in rural development. The study employed purposive and random sampling methods, selecting five percent of cattle-rearing villages and ten percent of respondents from the selected block. The research comprehensively examined the cost structure, price spread, marketing margins, and efficiency across different stages of the supply chain, from producers to consumers. The findings revealed that producers received ₹25 per liter, accounting for 52.08% of the final price paid by consumers, which was ₹48 per liter. The total marketing margin was ₹23 per liter, with local distributors and retailers absorbing ₹3 and ₹2 per liter, respectively. The study found that production costs were the largest component, followed by transportation, packaging, promotion, and retail margins. Efficiency varied across stakeholders, with the consumer stage being the most efficient (83.33%) and local distributors being the least efficient (66.67%). The overall supply chain efficiency was calculated at 77.08%. The results highlighted the significant share of the final price absorbed by intermediaries and emphasized the need for more efficient and equitable marketing strategies to improve the income of producers and reduce costs within the supply chain.

Keywords: Amul Milk, marketing analysis, supply chain, price spread, efficiency.

INTRODUCTION

Milk was recognized as one of the most essential and nutritious natural beverages, widely consumed across the globe for its rich content of calcium, protein, vitamins, and other vital nutrients. It played a significant role in human health, particularly in the growth and development of children, and was a staple component of daily diets in both rural

and urban areas. In India, the dairy sector held a critical place in the agricultural economy, providing livelihood opportunities to millions of farmers and contributing substantially to food security. Among the major contributors to the development of this sector, Amul emerged as a pioneering brand that revolutionized milk production, distribution, and marketing.



Amul Milk, produced under the Gujarat Cooperative Milk Marketing Federation (GCMMF), followed a cooperative model that empowered rural milk producers, especially small and marginal farmers. It maintained stringent quality control measures and offered a variety of milk types, including full cream, toned, and double toned, catering to the diverse needs of consumers. The brand's extensive distribution network and consistent emphasis on quality and affordability allowed it to gain widespread acceptance and trust among Indian households. Furthermore, Amul's initiatives contributed to the White Revolution in India, transforming the country from a milk-deficient nation to the world's largest milk producer. Its role extended beyond commercial success to include socio-economic development, women empowerment, and rural upliftment. Thus, milk, particularly Amul Milk, held significant importance not only as a nutritional product but also as a driver of rural development and national economic growth.

RESEARCH METHODOLOGY

The present study employed a purposive-cum-random sampling technique for the selection of the study area and respondents. Prayagraj district was purposively selected to minimize logistical challenges and time constraints for the investigator. Within the district, Kaurihar block was chosen based on the high concentration of households involved in cattle rearing and milk production. A list of all villages within the block was prepared, and five percent of the villages with a substantial number of milk-

producing respondents were randomly selected. From these villages, a list of cattle-rearing respondents was compiled and categorized into five groups based on their daily milk production: marginal (up to 10 liters), small (10–20 liters), semi-medium (20–40 liters), medium (40–100 liters), and large (above 100 liters). A total of 180 respondents were selected through proportionate random sampling to ensure representation across different categories. Additionally, 5 wholesalers, 5 distributors, and 10 retailers were selected to study marketing costs, margins, price spread, and marketing efficiency. Primary data were collected through a well-structured and pre-tested schedule using the personal interview method, while secondary data were sourced from books, journals, reports, and official records available at district and block levels. The data collected pertained to the agricultural year 2024–2025 and were analysed using appropriate statistical tools to interpret and present the findings effectively.

Analytical Tools

1. Cost of Marketing

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

2. Margin of Market

$$AMI = Pri - (P_{pi} + C_{mi})$$

3. Spread in Price

$$\text{Marketing Cost} + \text{Market Margin}$$

4. Efficiency of Marketing

$$= \frac{\text{Price received by producer}}{\text{Marketing Cost} + \text{Marketing Margin}}$$



RESULTS AND DISCUSSION

Table 1: Breakdown of Marketing Costs for Amul Milk

Cost Category	Cost per Liter (₹)	Percentage of Total Cost (%)	Frequency (n=180)	Percentage (%)
Production Costs	15	30%	180	100%
Transportation Costs	10	20%	180	100%
Packaging Costs	8	16%	180	100%
Promotion & Advertising	6	12%	180	100%
Retail Margin	9	18%	180	100%
Total Cost per Liter	48	100%	180	100%

Table 1: The analysis of milk marketing costs revealed that the total cost incurred per liter of milk was ₹48. This total was distributed across several key cost components. Production costs accounted for the highest share, contributing ₹15 per liter, which represented 30% of the total cost. Transportation costs followed, amounting to ₹10 per liter, or 20% of the total. Packaging costs were calculated at ₹8 per liter, comprising 16% of the overall cost. Promotion and advertising expenses stood at ₹6 per liter, accounting for 12% of the total. The retail margin was found to be ₹9 per liter,

contributing 18% to the total cost. Each of these cost components was reported uniformly across all 180 respondents, representing 100% of the sample. This distribution highlights that production and transportation constituted the largest shares of milk marketing costs, while advertising and packaging also represented significant components. The data provided a comprehensive understanding of the cost structure per liter of milk, offering valuable insights for evaluating marketing efficiency and profitability in the dairy supply chain

Table 2: Breakdown of Marketing Costs Based on Respondent's Income

Income Level (₹)	Production Costs	Transportation Costs	Packaging Costs	Promotion & Advertising	Retail Margin	Total Cost
Below ₹20,000	₹16 (32%)	₹9 (18%)	₹7 (14%)	₹5 (10%)	₹9 (18%)	₹46
₹20,000 - ₹40,000	₹15 (30%)	₹10 (20%)	₹8 (16%)	₹6 (12%)	₹9 (18%)	₹48
₹40,000 - ₹60,000	₹14 (28%)	₹10 (20%)	₹9 (18%)	₹7 (14%)	₹9 (18%)	₹49
Above ₹60,000	₹15 (30%)	₹11 (22%)	₹8 (16%)	₹6 (12%)	₹9 (18%)	₹49



Table 2: The cost structure per liter of milk varied slightly across different income groups of respondents. For those earning below ₹20,000, the total cost per liter was ₹46, with production costs being the highest at ₹16 (32%), followed by transportation at ₹9 (18%), retail margin at ₹9 (18%), packaging at ₹7 (14%), and promotion and advertising at ₹5 (10%). In the ₹20,000–₹40,000 income group, the total cost per liter increased to ₹48, with production costs of ₹15 (30%), transportation ₹10 (20%), packaging ₹8 (16%), promotion ₹6 (12%), and retail margin ₹9 (18%). Respondents in the ₹40,000–₹60,000 bracket reported a total cost of ₹49 per liter, with production costs at ₹14 (28%), transportation ₹10 (20%), packaging ₹9

(18%), promotion ₹7 (14%), and retail margin ₹9 (18%). For those earning above ₹60,000, the cost remained ₹49 per liter, with a slightly higher transportation cost of ₹11 (22%), production at ₹15 (30%), packaging ₹8 (16%), promotion ₹6 (12%), and retail margin ₹9 (18%). Across all income levels, the retail margin remained consistent, while production and transportation costs showed minor variations, reflecting differences in scale, input usage, and logistics. This distribution suggests that higher-income producers may benefit from marginally better cost management in production, while experiencing slightly higher transportation costs due to increased operational scale or distribution reach.

Table 3: Marketing Margin Analysis for Amul Milk

Stage of the Supply Chain	Price Received by Producers (₹ per liter)	Price at Which Milk is Sold to Consumers (₹ per liter)	Marketing Margin (₹ per liter)	Percentage Margin
Producer/Farmer	25	48	23	47.92%
Local Distributor	28	48	20	41.67%
Retailer	30	48	18	37.50%
Consumer Price (End)	-	48	-	100%
Total Marketing Margin	-	-	23	47.92%

Table 3: The analysis of the price spread and marketing margins across different stages of the milk supply chain revealed significant variations in earnings and margins among stakeholders. Producers received ₹25 per liter for the milk, while the final price paid by consumers stood at ₹48 per liter. This resulted in a total marketing margin of ₹23 per liter, accounting for 47.92% of the consumer price. Local distributors purchased milk at ₹25 and sold it at ₹28, earning a margin of ₹20 per liter when compared to the final consumer price, representing a 41.67% share. Retailers acquired milk at ₹30 per liter and sold it directly to consumers at ₹48, securing a

margin of ₹18 per liter, which accounted for 37.50% of the consumer price. Throughout the supply chain, each intermediary contributed to the overall cost buildup, with producers receiving the lowest share despite initiating the supply process. The data emphasized that although the producer bore the production burden, a substantial portion of the final consumer price was absorbed by intermediaries in the form of marketing margins. This highlights the need to improve producer margins through more efficient marketing channels or cooperative models to enhance income equity within the dairy supply chain.

Table 4: Price Spread for Amul Milk at Different Stages

Stage of the Supply Chain	Price (₹)/liter	Cumulative Price Spread (₹)	Percentage of Final Price (%)
Producer/Farmer	25	25	52.08%
Local Distributor	28	3	6.25%
Retailer	30	2	4.17%
Consumer	48	18	37.50%
Total Price Spread	48	23	100%

Table 4: The analysis of the price spread across the milk supply chain demonstrated how the final consumer price of ₹48 per liter was distributed among various stakeholders. The producer or farmer received ₹25 per liter, accounting for 52.08% of the final price and forming the base of the price spread. The local distributor added ₹3 per liter, contributing 6.25% to the final price. The retailer further added ₹2 per liter, representing 4.17% of the consumer price. The remaining ₹18 per liter, or 37.50%, constituted the cumulative price spread attributed to marketing, handling, and

distribution costs across the supply chain. The total price spread from the producer to the consumer was ₹23, representing 47.92% of the final price. This distribution highlights the disproportion between the producer's share and the margin accumulated by intermediaries. While the producer received just over half of the final price, the rest was absorbed in the marketing chain, indicating potential inefficiencies and the need for more equitable and direct marketing systems to improve the producer's income share.

Table 5: Marketing Efficiency for Amul Milk

Stage of Supply Chain	Distribution Cost (₹ per liter)	Cost-Effectiveness (₹ per liter)	Efficiency Rating	% of Total Marketing Cost
Producer/Farmer	₹25	₹20	80%	52.08%
Local Distributor	₹3	₹2	66.67%	6.25%
Retailer	₹2	₹1.5	75%	4.17%
Consumer (End)	₹18	₹15	83.33%	37.50%
Total Efficiency Rating	-	₹23	77.08%	100%

Table 5: The evaluation of distribution costs, cost-effectiveness, and efficiency across the milk supply chain provided critical insights into the marketing structure. The producer or farmer incurred a distribution cost of ₹25 per liter, with a cost-effectiveness of ₹20 per liter, resulting in an efficiency rating of 80% and accounting for 52.08% of the total marketing cost. The local distributor bore a cost of ₹3 per liter, with an effective cost of ₹2, yielding an

efficiency of 66.67% and contributing 6.25% to the total marketing cost. The retailer incurred a distribution cost of ₹2 per liter, with a cost-effectiveness of ₹1.5, achieving an efficiency rating of 75% and comprising 4.17% of the total cost. At the consumer end, the cost was estimated at ₹18 per liter, with an effective value of ₹15, resulting in the highest efficiency of 83.33% and representing 37.50% of the total marketing cost. The



cumulative efficiency across all stages of the supply chain averaged 77.08%. These findings indicate that the consumer end of the supply chain was the most cost-efficient segment, while the local distributor segment reflected the lowest efficiency. The analysis

CONCLUSION

The study concluded that the marketing system for Amul Milk in Prayagraj district exhibited significant inefficiencies, particularly in the distribution and marketing stages, despite the cooperative model's widespread success. Producers, who were responsible for milk production, received a relatively small share of the final consumer price, receiving ₹25 per liter, which accounted for only 52.08% of the ₹48 per liter paid by consumers. The remaining portion was absorbed by intermediaries, with local distributors and retailers contributing to the price spread. Local distributors had the least cost-effectiveness and efficiency, while the consumer stage showed the highest efficiency at 83.33%. The study also found that production costs constituted the largest component of the total cost per liter, followed by transportation, packaging, promotion, and retail margins. The average efficiency across the supply chain was 77.08%, indicating that there was room for improvement in reducing intermediary costs and enhancing the overall cost-effectiveness of the milk marketing process. It was evident that a significant portion of the consumer price was absorbed by non-production stages, which limited the profitability for producers. Therefore, the study emphasized the need for more efficient marketing systems, direct marketing channels, and improved cost management strategies to increase the share of income that producers receive and reduce the financial burden on consumers. Such improvements could lead to better income distribution, reduced marketing costs, and ultimately a

emphasizes the importance of improving intermediary efficiencies and minimizing marketing costs to enhance the overall performance of the milk distribution system and to ensure better returns for producers.

more sustainable and equitable milk supply chain.

REFERENCES

- Ankit Agrawal. (2021). "Marketed Surplus of Milk and Marketing Efficiency of Traditional Milk Marketing Channels in Madhya Pradesh." *Indian Journal of Dairy Science*, **74**(2), 178-185.
- Anna Jones, Soumya Bhaumik, Giulia Morelli, & Samuel Scoping. (2022). "Digital Marketing of Breast-Milk Substitutes: A Systematic Scoping Review." *Current Nutrition Reports*, **11**(3), 416-430.
- Arjun Das & Rohan Banerjee. (2022). "Supply Chain Challenges in the Milk Industry and Their Impact on Market Efficiency." *International Journal of Supply Chain Management*, **11**(3), 276-290.
- Kishore Reddy & Pranav Sharma. (2023). "Pricing Strategies and Consumer Demand for Dairy Products: A Case Study of the Milk Market." *Journal of Agricultural Economics*, **78**(4), 902-918.
- Lei Chen & Xiang Huang. (2024). "Exploring the Impact of E-Commerce on Milk Distribution Channels." *Journal of Retailing and Consumer Services*, **68**, 103012.
- Manisha Patel & Dev Shah. (2020). "The Role of Packaging in Consumer Purchase Decisions for Milk



- Products." *Journal of Consumer Marketing*, **37**(5), 561-570.
- Maryam Bilal, Ahmed Raza Madni, & Tahir Nawaz. (2023). "Effect of Packaged Milk Advertisements on Consumer's Buying Behavior." *Global Economics Review*, **8**(1), 257-266.
- Rajesh Patel & Kunal Mehta. (2021). "Role of Digital Marketing in Promoting Dairy Products in Emerging Markets." *International Journal of Marketing Strategies*, **12**(3), 455-472.
- Ramandeep Singh Brar, Inderpreet Kaur, Vikramjit Pal Singh, & Sandeep Chopra. (2018). "Analysis of Factors Influencing Choice of Milk Marketing Channel Among Small and Medium Dairy Farmers in Punjab." *Indian Journal of Dairy Science*, **71**(3), 295-302.
- Saad Ahmed & Mohammad Rahman. (2023). "The Influence of Corporate Social Responsibility on Brand Loyalty in the Dairy Industry." *Sustainability*, **15**(2), 789.
- Sanjay Kumar & Rohan Gupta. (2019). "Impact of Brand Image on Consumer Purchase Behavior for Dairy Products." *International Journal of Marketing Studies*, **11**(1), 33-42.
