

## “BARRIERS AND CHALLENGES IN THE PURCHASE AND CONSUMPTION OF DAIRY PRODUCTS”

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### ABSTRACT

Despite the potential benefits of dairy products and the food sector, numerous barriers and challenges have been addressed through this paper due to the low consumption levels and their ongoing decline, which raises a major concern. Such sectors play a vital part towards the country's agricultural economy, thereby is on the verge of major change. Worldwide, the dairy industry is witnessing remarkable shifts in areas such as technology, animal food quality, breed health and improvement, quality control, modern equipment and machinery, diversification of dairy products, and innovative marketing approaches. The present research work also presents vast opportunities for both the creative and innovative startups with the increase in the number of populations, higher income levels, and greater awareness about health. Yet, such growth potentials and new opportunities is limited by obstacles like the rising production costs, complicated regulated requirements, as well as gaps in the supply chain.

This study seeks to deliver a thorough review of this present scenario by exploring the market behavior, consumer preferences, technological progress, and government regulations, though it provides strategic suggestions to support the growth and long-term sustainability in this vital industry.

**KEY WORDS:** Agricultural economy, Food sector, Dairy Industry, Innovative marketing, Technological progress.

### INTRODUCTION

The global dairy industry in its present situation is experiencing numerous shifts and challenges. Several elements like access towards new and advanced technologies, better infrastructure, and the development of marketing strategies, have played a vital role in driving strong growth and progress in this dairy sector. Therefore, such evolving patterns of the global dairy industry are significant. This sector in countries like India provides major socio-economic advantages for rural communities. Such numerous benefits can be further strengthened by tapping into the vast unorganized segment of the Indian dairy market. The major players in the dairy industry include milk producers, processors, marketers, retailers, and consumers. Producers, the value chain, and consumers also play an equally important role in the growth of this dairy products industry. The present research work will also introduce that consumers of the dairy products are showing a rising preference for protein-rich, healthy, and “clean label” dairy products. Modern buyers and new toddlers are increasingly looking for more “functional foods”.

Therefore, the demand for milk-based protein products is also steadily growing, particularly amongst athletes, the elderly, infants, and young children. Amongst every group of consumers in the market, dairy products do remain demanded since they are an affordable source of protein, tasty, and easily accessible. The shift in consumer preferences has impacted dairy food production and consumption across different stages of the value chain. This change has introduced several new factors that influence how people make their food choices. Hooda et.al. (2025) stated Dairy product items, whether it is raw or processed ones,

do not last long such challenges therefore, they need careful temperature regulation and accurate stock management across the supply chain to avoid damage and wastage. Small dairy farmers do face challenges and especially struggle with the heavy expenses on feed, fertilizers, and labor costs, thereby raising their overall costs and results in higher prices for the final products. According to Jafri et.al. (2024), the availability of weak and improper infrastructure often limits the growth and competitiveness of many small dairy farms, while quick distribution is necessary to avoid product spoilage. The higher cost of production and delivery of dairy products also makes it expensive for consumers with limited income. Such instability in prices and market fluctuations leads to financial pressure for producers at the same time, are some of the hindrances during the consumption and production of dairy products. Health concerns and digestive problems while, including consumption of dairy products like milk-related allergies, lactose intolerance (leading to breathing troubles or skin problems), and many issues, such as stomach pain or diarrhea, are some of the major obstacles during the consumption of dairy products. Odor and taste preferences, particularly of sheep and goat products, which do smell and taste “sheep-like” or “gamey”, discourage many consumers of the market because some of them mostly prefer milder and more neutral flavors. “The rising presence and popularity of plant-based milk options has become a major source of competition for the dairy industry.” Supply expenses and the high cost of production can push up the prices of dairy products, making them difficult to afford for consumers with limited income. Understanding consumer behavior is quite complicated because there are many factors involved, and they often interact and affect each other. We will also discuss in this paper how different studies reveal that consumer behavior towards products varies notably across different countries. Kurajdová et.al. (2015) mentioned factors which encourage and influence the above-mentioned challenges and barriers amongst consumers to buy dairy products is also important to promote their use. Therefore, at the same time, it also remains essential to understand the barriers which stop consumers from purchasing and consuming them, so that these issues can be addressed and resolved.

## LITERATURE REVIEW

Globally, the milk production across different countries is expected to grow at an averageprecedented rate of 1.9% over the next decade, which is thoroughly observed as slightly lower than the 2.3% yearly growth seen in the past few years. Though it is estimated that milk output and dairy products will rise by about 156 million tons, which is nearly 74% of this coming from developing nations. “Countries like India and China, alone, are projected to contribute around 38% of the total global growth.” The dairy sector of country like China has moved its attention from boosting of milk production towards enhancing milk quality and its production, which is thereby projected to grow at an average rate of 3.4% per year. According to Saxena et.al. (2020), the livestock sector of India is also considered one of the most pro-poor industries, as millions of people throughout the nation has received higher incomes and various job opportunities due to its steady growth. The milk revolution of India is a remarkable success story because the milk production across the nation grew sharply from 17 million tons during the year 1950-51 to 111 million tons in 2008-10, thus making the country the world’s largest milk producer, surpassing the US, which stood at 88 million tons. Samad et.al. (2025) stated furthermore, the milk production of India was projected to rise up-to 154 million tons by the year 2020, which is nearly close to the combined production of the whole European Union. The above-mentioned progress was made possible through the integration of innovative tools and technologies, which brought together millions of small dairy farmers across rural regions of the country. Contributing nearly around 16% of the global milk production, country like India support to be the world’s

largest milk producer. The rapid increase in the domestic demand driven by population growth and rising individual's income has made the country a net importer rather than an exporter of dairy products. Dairy products do provide us with a rich source of energy, proteins, calcium, vitamins, cholesterol, riboflavin, carbohydrate, and many other useful nutrients. Bahety et.al. (2024) mentioned that companies and organizations of dairy products study consumer behavior like how consumers think, and how their choices towards dairy products are influenced by the changing environments, as well as their shopping habits properly to help and shape better marketing strategies. Pinto et.al. (2016) asserted that consumer behavior for dairy products is quite complicated due to certain barriers and challenges that often interact and influence them. While consumption of dairy products, there are some challenges and barriers which influence consumers' behavior which including lactose intolerance and allergies, which might cause digestive problems such as bloating and diarrhea. Other concerns that involve the health risks related to the consumption of dairy products are saturated fats and their possible connection to diseases like cancer. Along with the negative nutritional effects from consuming higher levels of saturated fats, consumers are also worried about contamination from heavy metals, antibiotics, and veterinary drugs in the supply chain. Some research work also suggested that health-related challenges, such as the consumption of dairy products with high amounts of saturated fat, may raise the risk of severe heart diseases, while it may also be connected to a higher chance of developing certain types of cancer. Wattiaux et.al. (2019), mentioned that during the consumption of dairy products by consumers it, also possess numerous environmental challenges such as; "greenhouse gas emissions (like methane and nitrous oxide) from the cattle and manure, usage of heavy amount of water while growing the feed and processing, pollution of soil as well as water from fertilizers and manure runoff, damages of land caused by the conversion of land for feed crops, along with problems of waste handling and high energy use across the supply chain." Such environmental challenges do, shape and influence what consumers want, needs, like, attitudes, and interests, which eventually affect the way they behave as consumers. Despite so many health-related challenges, dairy products are still considered an important part of our healthy diet, and at every different stage of lives as they are connected with several health benefits. Consumption of dairy products helps in strengthening bones and teeth, lowers the chances of obesity, controls high blood pressure, heart diseases, and type 2 diabetes. Supports both hydration and muscle recovery after physical activity. Various studies have also shown that certain demographic factors are also linked towards lower dairy consumption, such as amongst different ethnic background, lower-income levels, higher body weight, and older age. Boys often consume more dairy products to appear strong and impress girls, while girls do tend to avoid them, as they see them as a food that could cause weight gain. Parents' influence and family environment can help to shape dairy intake amongst children in both helpful and discouraging ways. Many parents and household habits may promote or tend to limit the use of dairy foods. Including dairy products in their children's diets by adding it naturally into their meals can help to build the habit of consuming dairy products. According to Dougkas et.al. (2019), lack of interest towards the consumption of dairy products amongst children is also often caused by a preference for junk foods and low awareness about healthy eating and nutritional, thereby has also been one of the most optional barriers for children. Due to wrong beliefs spread by different people that harmful substances are being mixed or added to sterilized milk or different dairy products, many children have also discouraged many children. Therefore, one more barrier to children's dairy intake also remains distrust of dairy products, which include doubts about food label details or advertising claims. Roustae et.al. (2023) mentioned that higher prices of dairy products is one of the biggest obstacles in dairy consumption that both

children and families cannot control. This issue becomes more serious when children point out that prices of junk foods available are usually cheaper than dairy items. Such barriers would result in dairy products falling behind in competition with junk foods. Providing subsidies for dairy goods and products could be a useful step in reducing their costs. Francis et.al. (2024) explained that other barriers that consumers of dairy products cannot control are low product quality, unhealthy and unsuitable packaging of dairy products, lack of variety and innovation in dairy items (especially those which are meant for children), as well as improper placement of products in nearby stores. Baruk & Iwanicka. (2015), asserted that the packaging of dairy products also influences their sales, as the way a product is packaged leads to catching the attention of buyers in the market. Careful designing and coloring of packets, which are displayed in the stores, is very crucial. Low levels of food and nutrition knowledge amongst consumers, especially children, is also a barrier for not consuming dairy products. Food and nutrition literacy must be encouraged from schools like having the skills, ability, and understanding to plan a balanced diet and choose healthy foods for consumption. Even though many studies blame the media and social network platforms for spoiling children's preference for healthy foods, it is important to remember that such platforms also have the power to spread awareness and encourage better dairy consumption among this sensitive group of consumers. In developed countries, dairy products provide children and teenagers with important micro- and macro- nutrients. Calcium from dairy is easily absorbed by the body and makes up more than half of the total calcium intake.

Naganboyina & Kaple. (2022) stated that the reach of dairy products is still quite limited amongst consumers in India. Most of the milk is collected by private players and then supplied to private dairies or other distributors. Before reaching pasteurization units, the milk goes through several middle levels, which raises the final retail price. There is good potential to cut down the number of intermediaries involved in milk handling, which can help lower the overall cost. Solanki et.al. (2023) mentioned along with this, dairy products offer good-quality protein with peptides and active compounds that support growth. The fats present in such products provide us with energy along with essential and non-essential fatty acids. Even though milk and dairy products are known to be valuable parts of a healthy and balanced diet, their consumption among children and teenagers has dropped in many countries over the past few decades. Thus, in response, dairy companies have worked hard to improve and reformulate their products in recent years and will keep doing so, wherever it is technically possible, without affecting the quality or safety of the food. According to Jung et.al. (2015), usage of scientific research and evidence-based studies during the production of dairy products can help to encourage consumers of dairy products to choose them. Linkage of the products and goods with such studies can help build trust and tend to highlight their value. Dairy workers must be made aware of the product quality during the production process by improving hygiene, sanitation, food-safety, as well as overall efficiency of dairy plants in line with international standards. Technology-driven platforms for delivering milk and dairy products are expected to expand even more in the coming years. Major companies will aim to provide customers with a better shopping experience by offering all services through a single unified app.

### **Objective**

To identify the Barriers and Challenges in the Purchase and Consumption of Dairy Products.

### **Methodology**

A study survey was conducted among 227 people from different regions. "Random sampling method" along with "T-test" were used to collect and analyse the data.

### **Data Analysis**

In the total population of the study survey, males are 51.98% and females are

48.02%.34.80% of them are 20 to 25 years of age, 35.68% are between 25 to 30 years, and 29.52% are above 30 years. Looking at the Regions, 55.95% are from the Urban region and 44.05% are from the Rural region.

**“Table 1 General Details”**

“Variables”	“Respondents”	“Percentage”
Male	118	51.98
Female	109	48.02
<b>Total</b>	<b>227</b>	<b>100</b>
<b>Age (years)</b>		
20 to 25	79	34.80
25 to 30	81	35.68
Above 30	67	29.52
<b>Total</b>	<b>227</b>	<b>100</b>
<b>Region</b>		
Urban region	127	55.95
Rural region	100	44.05
<b>Total</b>	<b>227</b>	<b>100</b>

**Barriers and Challenges in the Purchase and Consumption of Dairy Products**

“S. No.”	“Statements”	“Mean Value”	“t value”	“Sig.”
1.	High prices of dairy products is a barrier for low- and middle-income consumers	4.29	19.778	0.000
2.	Concerns about adulteration and quality issues reduce consumer’s trust	4.23	18.977	0.000
3.	Limited cold storage and poor supply chain hinders availability of fresh dairy products	4.31	20.533	0.000
4.	Lacking awareness about nutritional benefits leads to lower demand	4.13	17.355	0.000
5.	Seasonal fluctuations in milk production impact consistency in supply and pricing	4.19	18.576	0.000
6.	Packaging and storage issue affect shelf-life of product and confidence of consumers	4.17	17.956	0.000
7.	Lactose intolerance and milk allergies restrict consumption among sensitive group	4.00	15.492	0.000
8.	Inadequate distribution network in rural and remote areas restrict consumer access	4.03	16.028	0.000
9.	Cultural and religious dietary restrictions influence the purchase of certain dietary products	4.11	17.065	0.000
10.	Rising health concerns related to fat content discourage consumption	4.33	2.805	0.000



Above table shows statements for Barriers and Challenges in the Purchase and Consumption of Dairy Products, first statement High prices of dairy products is a barrier for low- and middle-income consumers show the mean value (4.29), Concerns about adulteration and quality issues reduce consumer's trust (4.23), Limited cold storage and poor supply chain hinders availability of fresh dairy products (4.31), Lacking awareness about nutritional benefits leads to lower demand (4.13), Seasonal fluctuations in milk production impact consistency in supply and pricing (4.19), Packaging and storage issue affect shelf-life of product and confidence of consumers (4.17), Lactose intolerance and milk allergies restrict consumption among sensitive group (4.00), Inadequate distribution network in rural and remote areas restrict consumer access (4.03), Cultural and religious dietary restrictions influence the purchase of certain dietary products (4.11), and Rising health concerns related to fat content discourage consumption (4.33). All statements pertaining to Barriers and Challenges in the Purchase and Consumption of Dairy Products are found to be significant, with p-values below 0.05 following the application of a t-test.

## CONCLUSION

After going through this present research work, it was concluded that the high expense of producing milk and dairy products is one of the biggest obstacles among consumers in the dairy sector. Therefore, keeping in mind the available resources, people's consumption habits of dairy products, and the above-mentioned barriers, lawmakers must think about reshaping the operations of the dairy sector by encouraging the use of new tools and technologies. To tackle issues related to dairy prices, authorities can work on revising pricing rules and lowering heavy government control, letting the market naturally decide rates. Governments, at the same time, must provide subsidies on dairy products for the poor and vulnerable groups to make them more affordable to them. Healthy competition can improve the quality as well as the availability of dairy products. With the integration of quality-check systems and the setting up of independent agencies to monitor and solve quality-related problems of dairy products. Leaders and decision-makers should also give importance to creating dairy awareness programs, that could educate people about the health benefits and safety of dairy foods.

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