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## STUDYING CONSUMER BEHAVIOR RELATED TO DAIRY PRODUCTS, INCLUDING PREFERENCES FOR ORGANIC AND PLANT-BASED ALTERNATIVES, AND THE IMPACT ON DAIRY FARMING

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### ABSTRACT

This study looks at consumer behavior related to dairy products, specifically focusing on preferences for plant-based and organic alternatives and how that affects dairy production. Health, environmental, and ethical considerations are influencing consumer preferences in the dairy industry more and more. Dairy products that are organic are thought to be healthier and more environmentally friendly than their conventional counterparts, while plant-based substitutes are becoming more and more well-liked for moral and perceived health reasons. Changes in consumer preferences have a big impact on market strategies and sustainability initiatives related to dairy farming techniques. Comprehending these dynamics is vital for dairy sector players to proficiently modify production techniques and marketing strategies. Using a mixed-methods approach, this study investigates consumer behavior and motivations, offering insights into the trajectory of dairy product consumption going forward and its effects on the agricultural sector.

**KEYWORDS:** Consumer behavior, Dairy products, Organic preferences, Plant-based alternatives and Dairy farming impact

### INTRODUCTION

Dairy product consumption patterns are changing significantly as a result of changing consumer tastes and social developments. There has been a noticeable movement in the dairy industry in recent years toward organic and plant-based substitutes. This tendency is indicative of a greater consumer concern on sustainability, ethics, and health.

Dairy has historically been a staple of diets all across the world, appreciated for its abundance of

nutrients and adaptability in the kitchen. But the advent of organic dairy products has expanded the range of options available to consumers. Because organic dairy products don't include artificial chemicals or antibiotics, people view them as healthier. This perception is in line with the growing desire from consumers for food products that are seen as more wholesome and natural.

Concurrently, consumers now have more options thanks to the growth of plant-based dairy substitutes. The rising popularity of plant-based dairy products including yogurt, cheeses, and milks made from soy, almond, oat, and coconut has been attributed to worries about lactose intolerance, animal welfare, and environmental sustainability. Customers that care about the environment and want to lessen their carbon footprint will find these options intriguing as they frequently have less environmental impacts than traditional dairy production.

## **OBJECTIVE**

- Determine the elements influencing consumers' decisions about plant-based, organic, and conventional dairy products.
- Examine the cultural, socioeconomic, and demographic elements driving these preferences.
- Keep an eye on current market trends and forecast the demand for different dairy products in the future.
- Examine the effects of changing customer preferences on the dynamics of the dairy market as a whole.
- Look into how dairy producers and farmers might modify their methods to satisfy shifting consumer needs.
- Examine the viability and difficulties of switching to organic farming or introducing items made from plants.

## **Scope**

Studying consumer behavior with regard to dairy products encompasses a wide range of topics, including preferences for organic and plant-based substitutes as well as the effects on dairy production. The following significant elements are included in this scope:

1. **Customer Motives and Preferences** Knowing why consumers select plant-based, organic, or traditional dairy products. This covers things like perceived nutritional benefits, worries about hormones or antibiotics, ethical issues (like animal welfare and supporting local farmers), environmental concerns (like carbon footprints and sustainable agricultural practices), and health considerations (like perceived nutritional benefits).

2. **Market Trends and Growth:** Examining the patterns in the use of plant-based substitutes and dairy products. This entails looking at market shares, growth rates, and consumer demographics that

influence the demand for various dairy products, such as age, income levels, and location.

3. **Impact on Dairy Farming Practices:** Evaluating the influence of consumer inclinations toward plant-based and organic alternatives on dairy farming methods. This covers modifications to production techniques (such as switching to plant-based milk production or implementing organic farming methods), sustainability programs (such as cutting greenhouse gas emissions or increasing resource efficiency), and requirements for animal welfare.

4. **Supply Chain Dynamics:** Examining how the dairy supply chain—which includes farmers, processors, and retailers—may be affected. This entails comprehending how changes in customer demand affect the logistics of the supply chain, the distribution routes, and the retail tactics for dairy products and substitutes.

## **METHODOLOGY**

Using a literature review methodology, this research draws conclusions from academic journals, industry reports, and official government publications. The *Journal of Dairy Research*, *Food Policy*, *International Journal of Dairy Technology*, and *Journal of the Indian Dairy Association* are important sources. This method provides a comprehensive study of the industry's current state, obstacles, and future prospects by synthesizing existing studies.

## **REVIEW OF LITERATURE**

### **Customer conduct**

Health consciousness, environmental concerns, and ethical issues have all had an increasing impact on consumer behavior in the dairy industry. This study summarizes the body of research on consumers' preferences for plant-based and organic dairy substitutes as well as how these choices may affect dairy production methods.

#### **1. Preferences of Customers for Organic Dairy Products:**

Because organic dairy products don't include artificial hormones, antibiotics, or pesticides, consumers view them as safer and healthier (Ferguson et al., 2019). Research comparing organic and conventional milk reveals that the former has greater antioxidant levels and healthier fatty acid profiles. (Butler et al., 2020). According to market trends, customer concerns about animal welfare and environmental sustainability are fueling an increase in demand for organic dairy products (Hughner et al., 2012). Dairy farmers have been forced by consumer preferences to switch to organic farming methods in order to comply with certification requirements and profit from higher prices (Bansal and Sudheesh, 2018).

2. **Consumer Adoption of Plant-Based Alternatives:** - Consumers looking for lactose-free options or avoiding animal-derived goods have become more popular with plant-based alternatives, such as soy, almond, oat, and coconut-based milks (Risvik et al., 2021). This trend has been influenced by the growing popularity of plant-based diets and ethical questions raised by animal husbandry (Hoek et al., 2019). Sensory qualities, nutritional value, and perceived health advantages over conventional dairy products all affect consumers' acceptance of plant-based substitutes (Smetana et al., 2020). The availability and variety of plant-based dairy substitutes in retail marketplaces have increased due to innovations in product formulation and marketing techniques (Silva et al., 2020).

3. **Impact on Dairy Farming Practices:** - Dairy farming faces both opportunities and challenges as a result of the shift to organic and plant-based alternatives. Strict adherence to criteria for animal welfare, soil health, and sustainability is necessary for organic farming; this may call for adjustments to management and production methods (Meemken et al., 2018).

- On the other hand, in response to market forces, traditional dairy producers have started to investigate diversifying into the production of plant-based milk or implementing sustainability practices in order to appeal to environmentally conscious consumers (Janssen and Hamm, 2021). Dairy farming is increasingly viewed as needing to embrace innovation and technology in order to meet customer needs, increase productivity, and lessen environmental effect (Pereira et al., 2019).

### **Market opportunity**

1. **Growing Customer Demand:** More and more consumers are becoming conscious of and drawn to organic goods, especially dairy. Because organic dairy products don't include artificial chemicals, hormones, or antibiotics, which are frequently utilized in conventional dairy farms, consumers view them as healthier. This group of consumers is health-conscious and looks for goods that support their preferences for natural and organic foods (Butler et al., 2020).
2. **Health and Wellness Trends:** Demand for organic dairy products is being driven by the worldwide movement towards healthier diets and lifestyles. According to Bansal and Sudheesh (2018), organic agricultural methods are thought to yield foods with greater nutritional value and less dangerous chemical residues, making them more desirable to consumers trying to improve their diet and general health.
3. **Regulatory Support and Certification:** Consumers are reassured about the legitimacy and quality of organic dairy products by regulatory frameworks and certifications for organic products. By guaranteeing openness and adherence to organic farming practices, trust in organic certification labels promotes customer confidence and fosters market expansion (Hobbs and Goddard, 2015).

4. **Innovation and Product Diversity:** Organic milk, cheese, yogurt, and butter are just a few of the new products and product offers that the organic dairy business is offering. In response to the increasing demand from consumers and the potential market for organic dairy products, producers and merchants are diversifying their product offerings to include more organic options (Hess et al., 2020).

### **Comparison of organic and no-organic dairy products**

When compared to their non-organic equivalents, dairy products that are organic have the following advantages:

1. **No artificial fertilizers or pesticides:** Organic dairy production forgoes the use of artificial chemicals, minimizing the impact on the environment and possible residues in the products.
2. **No artificial hormones or antibiotics:** Antibiotic resistance and hormone disruption may arise because organic standards prohibit the use of synthetic hormones and antibiotics in dairy animals.
3. **Higher nutritional quality:** Research indicates that dairy products produced organically may include greater concentrations of antioxidants and omega-3 fatty acids, among other nutrients.
4. **Animal welfare:** Organic standards often contain provisions for the welfare of animals, such as grazing and outdoor space access, which may enhance the health of dairy cows.
5. **Environmental benefits:** Sustainable agricultural methods that prioritize biodiversity can result in better water quality, healthier soils, and lower pollution levels.
6. **Flavor and taste:** Though this can be subjective, many consumers think that dairy products made organically have a superior flavor profile and a richer taste.
7. **Support for sustainable agriculture:** Purchasing organic dairy products is a way to show your support for farming methods that put sustainability and environmental responsibility first.

Overall, even though organic dairy products are frequently more expensive, a lot of consumers choose them because they care about the environment, animal welfare, and possible health advantages.

### **Prospects in the Organic Indian Dairy Industry**

For a number of factors, the Indian organic dairy market is expanding and has bright futures.

1. **Increasing consumer awareness:** Indian consumers are becoming more conscious of environmental

and health concerns, which is driving up demand for dairy and other organic products.

2. Health awareness: Because organic dairy products don't include artificial hormones, antibiotics, or pesticides, consumers who are concerned about their health will find them to be healthier.

3. Premium pricing: Because of its eco-friendly production practices and alleged health benefits, organic dairy products are more expensive on the market. Farmers can make more money with this price premium, which also motivates more farmers to use organic farming methods.

4. Intellectual support: Through a number of programs and subsidies, the Indian government has been encouraging organic farming and encouraging farmers to switch to organic practices.

5. The possibilities for export: India have the opportunity to benefit from the expanding global market for organic dairy products by manufacturing premium organic dairy products.

6. Improved sustainability and health of the soil: Organic farming techniques enhance sustainability and health of the soil, which can be especially helpful in the context of Indian agriculture, where soil degradation is an issue.

7. Requirements for certification: Customers now have greater faith in the legitimacy and caliber of organic dairy products thanks to the adoption of explicit certification requirements for organic goods.

To reach its full potential, the organic dairy sector in India must overcome obstacles like increased production costs, a lack of infrastructure for organic farming, and certification concerns. With government assistance, export opportunities, and consumer trends toward sustainability and health, the organic dairy business in India has bright futures.

### **Market Opportunity: -**

**Growing Consumer Demand:** As a result of worries about environmental sustainability, animal welfare, and health, there is a growing preference among consumers for organic dairy products. Because organic dairy doesn't include artificial hormones, antibiotics, or pesticides, consumers believe it to be safer and healthier.

**Health and Wellness Trends:** Demand for organic food items, especially dairy, has increased as a result of the growing movement towards healthier diets and lifestyles. Dairy products that are organic are frequently thought to have more nutrients and fewer dangerous ingredients.

**Premium Pricing and Profitability:** In the market, organic dairy products are usually more expensive than conventional dairy. In addition to increasing producer profitability, this premium pricing encourages farmers to switch to organic farming methods.

**Regulatory Support and Certification:** To give consumers peace of mind about the authenticity and quality of their purchases, some nations have developed certification requirements and regulatory frameworks specifically for organic products. Increased customer trust is facilitated by this regulatory support for market growth.

**Distribution Channel Expansion:** Organic dairy products are becoming more widely accessible online and in regular supermarkets as well as specialty health food shops. A wider range of customers is reached thanks to this increased distribution.

**Opportunities for Global Exports:** There is a demand for organic dairy products not only in home markets but also abroad. For farmers in areas with a high concentration of organic farming practices, exporting organic dairy products can be a profitable possibility.

**Environmental and Sustainability Factors:** By lowering chemical inputs, strengthening soil health, and boosting biodiversity, organic farming techniques support environmental sustainability. Customers that place a high value on sustainability are more likely to select organic dairy products over conventional ones.

**Product development and innovation:** Constant innovation in organic dairy products, such as new flavors, formats (such organic yogurt and cheese), and packaging, helps appeal to a wide range of consumer tastes and broadens the market.

**Education and Awareness of customers:** Demand for organic dairy products is expected to increase as customers learn more about their advantages, including their nutritional content and environmental effect.

**Some case studies:**

**European Union Organic Dairy Market Study:**

This study examined consumer perceptions of organic dairy products by examining data from different European nations. It was discovered that the perception of organic products as being safer and of greater quality, as well as health concerns and environmental sustainability, drove consumer behavior. One of the main conclusions was that, despite financial limitations, people were prepared to pay more for organic dairy because of these perceived benefits.

**US Consumer Preferences for Organic Dairy:**

Similar trends have been observed in US research, where consumers are favoring organic dairy





products over conventional ones more and more. Health conscience, worries about hormones and antibiotics in traditional dairy, and a desire to support sustainable agriculture techniques are some of the factors encouraging these preferences.

#### Australian Industry Perspectives:

Research conducted in Australia has revealed that customers are increasingly choosing organic dairy products due to worries about environmental effect, ethical issues, and health awareness. Because they consider organic dairy products to be healthier and more ecologically friendly, Australian consumers are willing to pay a premium for them.

#### Dynamics of the Asian Market:

Growing consumer awareness of food safety and quality is driving growing interest in organic dairy products in Asian nations, including South Korea and Japan.

According to studies, urban consumers in these nations believe that organic dairy products are safer and of higher quality, which has caused a shift in preference for organic options despite their higher price.

#### **Indian market for organic dairy products**

**Growing Consumer Awareness:** Indian consumers are becoming more conscious of their health and well-being, which is causing them to favor natural and organic products, particularly dairy.

**Urbanization and Lifestyle Shifts:** Consumers in India are becoming more aware of the safety and quality of food items, particularly dairy, as a result of urbanization.

**Trust in Organic Certification:** Developing customer trust and promoting market expansion are greatly aided by the existence of trustworthy organic certification standards, such as those offered by the Agricultural and Processed Food Products Export Development Authority (APEDA) and other organizations.

**Opportunities and Challenges:** It is necessary to overcome challenges including increased manufacturing costs, low customer awareness in rural areas, and logistical problems with delivery. Nonetheless, these obstacles also offer chances for expansion and funding in the organic dairy industry.

**Customer Preferences and Purchasing Patterns:** Research shows that when Indian consumers select organic dairy products, they give top priority to aspects like environmental sustainability, health





advantages, and certified quality.

### **Future research directions**

**Consumer Behavior and Preferences:** Perform in-depth research to examine how consumers feel about and prefer organic dairy products, as well as the variables that affect their decisions to buy (e.g., health advantages, environmental concerns, pricing).

To effectively customize marketing strategies, investigate variations in consumer views across various demographic groupings (e.g., age, income levels, urban vs. rural locations).

**Nutritional Value and Advantages to Health:** When comparing the nutritional profiles of conventional and organic dairy products, look for any discernible variations in the amount of certain nutrients (such as antioxidants and omega-3 fatty acids) resulting from the use of organic agricultural practices. Examine the possible health advantages of eating organic dairy products, including the potential for decreased exposure to hormones and antibiotics, as well as the effects on human health.

**Sustainability of the Environment:**

Examine how organic dairy production affects the environment in comparison to traditional agricultural practices, paying particular attention to issues like greenhouse gas emissions, water usage efficiency, and soil health.

Investigate cutting-edge farming techniques (agroforestry, rotational grazing) in organic systems to improve climate change resilience and sustainability results.

**Economic viability and production efficiency:**

Undertake research to optimize the productivity, profitability, and efficiency of organic dairy production systems by taking into account labor efficiency, disease control, and feed management. Analyze the financial sustainability of organic dairy production in comparison to conventional techniques, taking into account different market situations and cost-benefit calculations.

**Standards for Certification and Quality Control:**

Examine how well organic certification criteria ensure product quality, authenticity, and adherence to organic farming practices.

Create procedures, such as traceability and labeling guidelines, for confirming and guaranteeing the integrity of organic dairy products across the supply chain.

#### Dynamics of the Market and Supply Chain:

Examine market trends, prospects for expansion, and obstacles to entry for organic dairy products in various localities and international markets.

Examine supply chain dynamics, taking into account logistics, distribution networks, and customer perceptions of product accessibility and availability.

#### Innovation and Technology:

Examine technological developments and improvements, such as digital agriculture tools, sustainable packaging options, and precision farming methods, that could improve the production of organic dairy products.

Examine how new technologies, like blockchain and the Internet of Things, might be used to increase transparency.

#### **CONCLUSION:**

The research of dairy product consumer behavior reveals the intricate interactions among ethical inclinations, environmental sustainability, and health concerns. In order to meet changing customer needs, innovate product offerings, embrace sustainable practices, and manage market trends, stakeholders in the dairy business must have a thorough understanding of these dynamics.

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