

Consumer Behaviour in Premium Dairy Purchases: Implications for Horticultural Value Chains

Shreya Singh¹, Nikhil Chandel^{1*}, Doyeli Sanyal¹, Mushtaq A. Lone², Deepshikha Thakur¹, Ajay Tomar^{1*}, Kshitij Parmar¹, and Garima Thakur¹

¹Amity Institute of Organic Agriculture (AIOA), Amity University, Noida, Uttar Pradesh, 201313, India

²Division of Agricultural Statistics, SKUAST Kashmir, Srinagar-190025, India

Abstract. The Indian dairy sector has begun focusing less on pricing as a factor for consumption and more on fulfilling customers' requirements for high-end, value-added products such as organic milk, A2 milk, and other speciality dairy products. Similar changes can be observed in the horticultural product markets, where consumers are moving towards health-related products that also have attributes of food safety, traceability, sustainability, and quality assurance. On that ground, this paper tried to identify the psychological and socioeconomic factors which contribute the most to consumers' decisions to buy premium dairy products in the Delhi-NCR area. Data show that health consciousness is by far the leading reason for people buying premium dairy, since 70% of respondents stated that they would pay a premium for "farm-to-table" or "hormone-free" products. Properly communicating product traceability and transparent labelling leads to increased consumer trust, lower perceived risk, and greater brand loyalty. Though doubts about the authenticity of organic claims and concerns that producers may only want to be "green" on the outside while doing nothing still remain major purchase deterrents. The study reveals that transparency through certification and educating consumers are the main drivers in the rise of premium food products. This not only impacts horticultural production chains, where consumer preferences are now largely driven by sustainability, traceability, and quality assurance, resulting in new market opportunities, but also serves as a guide for producers and suppliers wanting to build trust with consumers and increase the availability of high-value agricultural products.

Keywords: Premium dairy products; consumer behaviour; health consciousness; brand trust; Garrett's ranking; multiple regression; urban consumers; horticultural value chains

1. Introduction

In the last few decades, the Indian dairy industry has radically changed. Milk is not just a beverage anymore, but it is something important to make different types of dairy products like butter yoghurt cheese, flavoured milk, branded milk, and probiotic products, etc. which in general cost higher because of changing consumer preferences. Increased incomes, fast urbanization, lifestyle changes and more awareness of nutrition and health. In particular in cities are the main factors behind this change [1,2]. Same here, the horticulture sector has also undergone changes, as consumers now want premium, organic, and nutritionally enriched food products. Increased consciousness of nutrition, food safety, and environmental issues has led to the rise of value-added horticultural product markets mainly in urban areas. So, knowing consumer behaviour has become very important for both the dairy and horticulture industries to cater to the premium markets.

Researches show that health awareness, product quality, and brand reliability are the three main factors that most

impact consumers to purchase premium dairy products. Due to perceived premium quality, cleanliness and higher nutritional value, consumers often opt for premium dairy goods rather than unbranded or loose items [3]. Still, at the same time, income level and price are the essential factors that influence a consumer's decision to pay. Mostly among the middle-income class.

India's food sector has witnessed a remarkable increase in the consumption of healthy and functional foods recently, mirrored by the worldwide trends in nutraceutical products. Besides, due to the stronger regulations introduced by the Food Safety and Standards Act (FSS) 2006 the general public have become more trusting of the high-end and health food categories [4].

Studies also show that different product features - like taste packaging shelf life, and availability - have a major impact on the consumers' decision to purchase [5,6]. Then again, besides high prices, poor availability of the products, and low consumer awareness must also be considered as factors preventing the growth of premium dairy products in developing countries.

*nchandel@amity.edu, atomar2@amity.edu

Horticulture is indispensable for nutrition security, offering a diverse diet, and ensuring the overall sustainability of agricultural development. Fruits and vegetables contain plenty of nutrients like minerals, antioxidants, and other bioactive compounds, that are very beneficial for human health. However, the increasing consumption of premium dairy and horticultural products is an indicator of the overall lifestyle change towards better health and sustainability.

Since consumer behaviour is highly complex, being the result of the interaction of psychological, socioeconomic, and other factors related to the product, it is also the biggest reason why producers, marketers, and policymakers should not only understand these behavioural factors but also consumer constraints to develop comprehensive and effective marketing strategies leading to the increased use of value-added products [5]. Because of this, the present research "Behavioural Factors Affecting Consumer Purchase of Premium Dairy Products" was aimed at analyzing how the psychological, socioeconomic, and product-related aspects affect consumer decision-making in an urban market like Noida. Also, the research was based on the first-hand survey data to reveal the main problems encountered by consumers.

International literature offers a broad conceptual and empirical basis for a better understanding of consumer preferences for premium dairy products. Through such studies, behavioral drivers, methodological approaches, and research gaps are identified. Mainly for urban markets in developed and emerging economies. Research conducted at the global level indicates that consumer purchasing behaviour of premium dairy products is a result of the interaction of various psychological factors (like health consciousness and trust), socioeconomic variables (income and education), and product attributes (quality branding packaging, and safety assurance).

Consumers commonly consider premium dairy products and residue-free fruits and vegetables as being more useful to health, safer, and more environmentally friendly. These thoughts are essentially the result of people's mindsets on topics like pesticide residues, food quality, and ecological side-effects of different production systems. Research shows that organic foods are predominantly thought of as being healthier and safer, and that factors like safety, nutrient content, environmental impact, flavour, and cost drive purchase decisions. But, the elevated prices of organic fruits and vegetables are still why hindering their mass consumption despite in reality the latter products are very attractive. Consumers' interest ultimately depends upon their financial situation as well as their perception of benefits [7,8].

Research coming from advanced economies also supports these conclusions. For example, Fox et al. (2004) showed that food safety assurance, brand reputation, and product quality have a strong impact on

consumer preferences in the US [9]. Verbeke (2006) in his work found health consciousness and expected nutritional benefits as key factors in Europe, whereas he also pointed out that lack of knowledge about products and scepticism towards health claims are significant barriers to change [10]. Also, in a similar vein, Grunert et al. (2007) are of the opinion that brand trust, certification, and country-of-origin information are very influential [11], whereas Jaffry et al. (2004) have shown that income, education, and household size are very important determinants of willingness to pay for quality-labelled dairy products [12]. Pieniak et al. (2010) stated that health-conscious consumers will go for functional dairy products, like low-fat, fortified, and probiotic ones [13].

Studies from Australia and Italy Also highlight that taste freshness packaging, convenience, and availability are the main factors influencing the consumers' decision-making [14,15]. In one study [16] about China, found that concerns about food safety, trust in the brand, and quality that is perceived by the consumers, are the paramount elements. Mainly for higher-income urban consumers.

For India, research consistently shows that health consciousness income brand trust, perceived quality, and product attributes are the first and foremost factors influencing the consumer behaviour towards top quality dairy products. These results highlight that there are still a lot of challenges to address price sensitivity, lack of trust in health claims, and the attitude behaviour gap. Besides nutrition, premium dairy products are seen as a very important element of sustainable food systems. Producers may be able to make changes in the way they produce, fear reduction, and supply chain transparency as these are some of the major factors driving consumer demand for traceability, ethical production, environmental sustainability, and food safety. Such market-driven changes are not only very important but also necessary for the achievement of balanced economic, environmental, and social outcomes [17]. The growth of premium dairy markets does not just reflect food and nutritional security (SDG 2), health and well-being (SDG 3), and decent work and economic growth (SDG 8) but also responsible consumption and production (SDG 12), and climate action (SDG 13) due to these markets aligning with several Sustainable Development Goals (SDGs) [17].

Even though this research is concentrated on premium dairy products, its potential impact also reaches to premium horticultural value chains, wherein consumer preference is increasingly being swayed by attributes similar to what drives premium dairy like food safety traceability certification, sustainability, and quality assurance. This will help the study to the broader sustainability debate as well as providing strategic advice for the stakeholders that are looking to improve market competitiveness, product differentiation, and consumer trust through consumer behaviour insights that are grounded in evidence.

2. Materials and Methods

2.1. Research Design

The study uses analytical and descriptive research techniques to investigate how consumers behave while purchasing high-end dairy products. While an analytical strategy aims to test hypotheses and do regression analysis to determine the degree to which behavioural elements influence consumer purchasing behaviour, a descriptive research approach focuses on assessing customer socioeconomic characteristics and consumption patterns.

2.2. Study Area and Sampling

The research was done in Noida, Uttar Pradesh. Here, the main factors behind a higher consumption of premium and value-added dairy products compared to other places are: presence of organised retail outlets, changing lifestyles, health consciousness, and higher income levels. The target audience was city-born people who are buyers or users of luxury dairy items such as organic dairy, butter with probiotics enrichment, and branded milk, yoghurt, cheese. The study will include those who consistently purchase premium dairy products. The purposive sample method was employed to guarantee that the study only included such individuals. Experts say that a sample of 100 respondents will provide accurate statistical analysis and regression projections.

2.3. Data Sources

The study used two ways of collecting data by using both primary and secondary data. Primary data were gathered straight from consumers through a market survey with a well-planned and pre-tested questionnaire comprising sections on: Secondary data were taken from various research resources, such as research papers books journals, market/industry reports, government publications, and company websites related to consumer behaviour and the dairy industry.

2.4. Analytical Tools and Model Specification

2.4.1. Dependent Variable: Consumer Purchase Behaviour (CPB)

Consumer Purchase Behaviour (CPB) indicates to what extent consumers are actively purchasing, willing to continue purchasing, and recommending premium dairy products. The Consumer Purchase Behaviour Index was created from participants' answers to three statements measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree): (1) I regularly purchase premium dairy products; (2) I intend to continue buying of premium dairy products in the future; (3) I would recommend premium dairy products to others. The CPB index was calculated as the mean score of the above statements.

2.4.2. Independent Variables

Six behavioural variables were identified as the main factors of consumer purchase behaviour, all assessed using multiple Likert-scale statements to capture the multidimensional character of consumer perceptions: Perceived Quality (PQ): quality, safety, hygiene, and superiority perception; Brand Image and Trust (BT): brand reputation, consistency, and trust; Health Consciousness (HC): health awareness, preference for fortified/probiotic products; Price Perception and Willingness to Pay (PP): price sensitivity and premium price acceptance; Packaging and Convenience (PC): packaging attractiveness, convenience, labelling; and Advertising and Product Information (AI): influence of advertisements, promotions, and nutritional information.

2.4.3. Multiple Regression Analysis

Multiple linear regression analysis was used to measure the effect of various behavioural factors on consumer purchase behaviour. The regression model is specified as:

$$CPB = \beta_0 + \beta_1(PQ) + \beta_2(BT) + \beta_3(HC) + \beta_4(PP) + \beta_5(PC) + \beta_6(AI) + \varepsilon$$

Where CPB = Consumer Purchase Behaviour; PQ = Perceived Quality; BT = Brand Image and Trust; HC = Health Consciousness; PP = Price Perception and Willingness to Pay; PC = Packaging and Convenience; AI = Advertising and Product Information; ε = Error term. The model was evaluated using regression coefficients, t-values, significance levels, and coefficient of determination (R^2).

2.4.4. Garrett's Ranking Technique

Garrett's Ranking Technique is a research method that helps to quantitatively measure the severity of problems that consumers have when purchasing luxury dairy products. What this technique does is convert the respondents' ranks into percentages of the total possible scores (i.e. Garrett's scores), which in turn allows one to compare the severity of the problems on a uniform scale. The constraints were ranked by the average Garrett scores (descending order). This way, the higher the score, the more serious the constraint.

3. Results and Discussion

3.1. Socio-Economic Profile of Consumers

Before we go into the investigation of the dairy product purchasing habits of the consumers, in particular the high-end buyers, it is highly important to accurately define the demographic and socioeconomic characteristics of the consumers. These characteristics can be age sex education occupation income, family size, etc. which can influence the consumer's purchasing power, health consciousness, lifestyle choices, and willingness to pay more for high-quality and value-added food products.

Table 1. Socio-Economic Profile of Respondents.

Variable	Category	Frequency	Percentage (%)
Age (Years)	Below 25	81	81.00
	25–34	13	13.00
	35–44	4	4.00
	55 and above	2	2.00
Gender	Male	55	55.00
	Female	45	45.00
Education	Up to 12th	44	44.00
	Graduate	26	26.00
	Post-Graduate	27	27.00
	Professional	3	3.00
Occupation	Student	81	81.00
	Private sector	7	7.00
	Homemaker	7	7.00
	Business	3	3.00
	Government sector	1	1.00
	Other	1	1.00
Monthly Income (₹)	Below 30,000	29	29.00
	30,001–60,000	24	24.00
	60,001–1,00,000	25	25.00
	Above 1,00,000	22	22.00
Type of Family	Nuclear	66	66.00
	Joint	34	34.00
Total		100	100.00

A vast majority of the market comprises younger customers, evidenced by in reality 81% of the persons sampled are under 25, with the 2534 age bracket coming at second place with 13% (Table 1). The predominance of youngsters among the customers suggests that young people might be purchasing more expensive dairy products simply because they are more nutrition and health conscious, their lifestyle affects their food choices, they prefer branded goods, and they are more open to trying organic, probiotic and fortified types. The gender split is almost equal with male respondents accounting for 55 per cent and females for 45 per cent of the total, which indicates that premium dairy products are no longer regarded as niche or gender-specific products but are rather seen as items for household consumption. A bit more than 53% of the sample household graduate and post-graduate degrees, while 44% are educated up to higher secondary level. There is a positive association between higher educational level and knowledge of food quality, nutritional labelling, health claims and brand credibility.

It is only natural that the largest group of respondents should be students (81 per cent), which is in line with the age profile of the sample and demonstrates that young consumers are getting more and more attracted to premium and health-oriented dairy products. The distribution of income shows a quite equal spread among different income levels, with 47 per cent of

respondents having a monthly income of more than ₹60,000. The bulk of respondents (66 per cent) are from nuclear families. Nuclear families typically have more flexibility in their food choices and tend to be more in line with convenience-oriented and premium food products. Overall, consumers of premium dairy products in Noida are mainly young, educated, students, belonging to nuclear families, and having moderate to high income levels.

The majority of young, educated consumers also suggest that a promising market exists for premium horticultural products, such as organic fruits, exotic vegetables, functional foods, fresh-cut produce, and nutraceutical products. These consumer groups are generally more open and receptive to quality differentiation, sustainability claims, and nutrition-oriented food choices.

3.2. Behavioural Determinants of Consumer Purchase Behaviour

Purchase behaviour of premium dairy products is most significantly influenced by consumer perception, attitudes, and beliefs regarding the product's quality, brand, health advantages, price, packaging, and promotional communications. A Consumer Purchase Behaviour Index (CPB) was created as the dependent variable in a multiple regression model to confirm the influence of these factors (Table 2).

Table 2. Measurement Scales and Index Construction for Independent Variables.

Index	Abbreviation	Constituent Statements/Variables
Consumer Purchase Behaviour Index	CPB	1. I regularly purchase premium dairy products. 2. I intend to continue buying premium dairy products in the future. 3. I would recommend premium dairy products to others.
Perceived Quality Index	PQ	1. Premium dairy products are safer and more hygienic than loose dairy products. 2. I trust well-known dairy brands. 3. I believe branded dairy products maintain consistent quality.
Brand Image and Trust Index	BT	1. I trust well-known dairy brands. 2. Brand reputation influences my purchase decision.

Health Consciousness Index	HC	1. Health benefits motivate me to buy premium dairy products. 2. I prefer fortified or probiotic dairy products. 3. Health awareness affects my dairy purchase decisions.
Price Perception and Willingness to Pay Index	PP	1. Premium dairy products are expensive. 2. I am willing to pay extra for better quality dairy products. 3. Price affects my frequency of purchasing premium dairy products. 4. Premium dairy products are expensive (reverse coding)
Packaging and Convenience Index	PC	1. Attractive packaging influences my purchase decision. 2. Convenient packaging sizes encourage purchase. 3. Clear labelling increases my confidence in premium dairy products.
Advertising and Product Information Index	AI	1. Advertisements increase awareness of premium dairy products. 2. Nutritional information on labels influences my buying decision. 3. Promotional offers motivate me to try premium dairy products.

3.3. Multiple Regression Analysis

Multiple linear regression analysis was used to investigate how behavioural factors affected consumers' purchasing decisions for high-end dairy products. Six behavioural indices were used as independent variables, and the dependent variable was the Consumer Purchase Behaviour Index (CPB).

Table 3. Model Summary of the Regression Analysis.

Multiple R	0.795354
R Square	0.632588
Adjusted R Square	0.608884
Standard Error	0.611911

Table 4. Analysis of Variance (ANOVA)

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	6	59.9553	9.99255	26.68699	0.00
Residual	93	34.82248	0.374435		
Total	99	94.77778			

Table 5. Regression Coefficients and Their Significance.

Variables	Coefficients	Standard Error	t Stat	P-value
Intercept	0.39284	0.549359	0.715089	0.476345
Perceived Quality Index (PQ)	0.280034	0.196379	1.425985	0.157221
Brand Image and Trust Index (BT)	-0.1734	0.167626	-1.03443	0.303615
Health Consciousness Index (HC)	0.451018	0.116852	3.859751	0.000209
Price Perception and Willingness to Pay (PP)	-0.02971	0.135125	-0.21986	0.826462
Packaging and Convenience (PC)	0.057669	0.132537	0.435117	0.664485
Advertising and Product Information (AI)	0.327903	0.120328	2.725067	0.007681

* Significant at the 0.05% level.

The value of Multiple R (0.795) signifies a strong positive correlation between consumer purchase behaviour and selected behavioural factors. The coefficient of determination ($R^2 = 0.633$) denotes that the independent variables in the model explain about 63.3 per cent of the total changes in consumer purchase behaviour towards premium dairy products. Upon adjusting for degrees of freedom, the Adjusted R^2 remains at a fairly high level of 60.9 per cent, which still suggests good explanatory power (Table 3). The calculated F-value (26.69) is significant at 0.05 per cent level, as reflected by the very low significance value (2.84×10^{-18}), validating that the set of behavioural variables jointly exerts a significant influence on consumer purchase behaviour of premium dairy products (Table 4).

Perceived Quality (PQ) was positively associated with purchase behaviour, although the impact was not statistically significant. This means that product quality is among one of the factors influencing the decision to buy, but it may be that quality is taken for granted in premium dairy products. Brand Image and Trust (BT) has a negative coefficient, but it is not significant, meaning that brand reputation by itself is not a major factor influencing purchase behaviour when other factors are kept constant. In horticulture markets, quality attributes like freshness, reference residues, free production, nutritional value, and shelf life often influence consumer preferences and taste.

Health Consciousness (HC) emerged as the major factor determining purchase behaviour, with a positive and highly significant coefficient ($p < 0.01$), indicating that consumers who are more health-conscious are more likely to purchase premium dairy products such as fortified, probiotic, and organic varieties. Similar consumer behaviour patterns have been reported for premium horticultural products too. Health-conscious consumers show a stronger preference for premium horticultural products, including organic fruits and vegetables, antioxidant-rich foods, and minimally processed horticultural products. These findings indicate significant opportunities for horticultural enterprises targeting health-oriented urban consumers.

Price Perception and Willingness to Pay (PP) shows a negative and not statistically significant correlation, denoting that premium dairy consumers might not be strongly deterred by elevated prices, probably owing to their higher income levels and value-based consumption. Clear communication on certifications, traceability, health advantages, and production processes can also affect consumer purchasing decisions and boost brand trust for horticulture products.

Packaging may be regarded as a minor element since Packaging and Convenience (PC) has a positive effect but one which is not statistically significant. The positive and statistically significant ($p < 0.01$) effect of advertising and product information (AI) indicates that promotions, ads, and nutritional information are very important tools in consumer awareness and purchase decision-making processes (Table 5).

3.4. Constraints Analysis: Garrett's Ranking Technique

Although consumers are growing more conscious and prepared to purchase high-end dairy goods, there are still certain barriers that prevent them from doing so. Garrett's Ranking Method discovered and ranked the most common issues that consumers face when purchasing high-end dairy products.

Table 6. Garrett's Ranking of Constraints in Purchasing Premium Dairy Products.

Rank	Mean Garrett Score	Constraint
I	71.93	Limited product variety
II	64.51	Perceived lack of value for money
III	60.26	High price
IV	56.87	Short shelf life
V	49.26	Limited availability
VI	47.65	Lack of trust in health claims

VII	44.38	Insufficient product information
-----	-------	----------------------------------

Although consumers are growing more conscious and prepared to purchase high-end dairy goods, there are still certain barriers that prevent them from doing so. Garrett's Ranking Method discovered and ranked the most common issues that consumers face when purchasing high-end dairy products. Even if the majority of individuals acknowledge that a higher price is acceptable for a higher-quality product, many still believe that the product's advantages, quantity, or distinctions from typical dairy products do not justify the price. According to a Garrett score of 60.26, the third significant limitation that consumers identified was the high cost. The fourth issue, which was mostly associated with yoghurt, probiotic drinks, and fresh cheese, was short shelf life (56.87). Limited availability (49.26) ranked fifth. Lack of confidence in health claims (47.65) and inadequate product information (44.38) are two limitations that were ranked lower on the list (Table 6). Even though these problems are very small, they nevertheless highlight the need for more transparency, health claims that are supported by science, and consumer education regarding the functional and nutritional advantages. The results show that consumers are more concerned about the product and value than they are about information or trust. Similar restrictions are frequently noted in the markets for high-end and exotic horticultural products, where consumers' preferences and their selections of organic foods and vegetables are impacted by the narrow selection of products, high costs, and worries about value for money. Improving product diversification, the certification system, and consumer awareness can improve market development across horticultural value chains.

The purpose of this paper is to give a detailed summary of the behavioural factors influencing the buying of premium dairy products in the urban area of Noida by consumers. Certainly, from the regression analysis it was concluded that health consciousness together with advertising/product information are the two leading behavioural factors that influence consumer purchase of premium dairy products. The rest of the factors like quality perception, brand image, price perception, and packaging, etc. are simply there but not significant on their own when health and information factors are considered. Besides that, the study further shows that main drivers for consumers to purchase premium dairy products are health consciousness and the extent of product communication effectiveness rather than price or brand alone. Even though consumers in the city area are showing more and more favour towards premium dairy products, their continued and increased consumption would depend on the health benefits they perceive, information plots being the clearest, and availability of a varied affordable product range.

The results also lead to significant sustainability concerns. Changing the preference of consumers towards premium dairy products which are healthier safer nutritionally richer, and more transparent for the

product, can be a great way for the dairy sector to adopt more sustainable production and marketing practices. Dairy producers and processors may be encouraged to concentrate on improving their production standards and supply chains with transparency by consumers' purchasing behaviour, which mostly consists of their preference for goods that are well-labeled, quality-assured, traceable, and responsibly produced. By encouraging responsible consumption habits and encouraging producers to adapt their methods to the always changing demands of consumers, such market-driven reforms contribute to the creation of sustainable food systems. Furthermore, the primary components that contribute to the requirement for consumer knowledge if sustainable consumption behaviour is to be promoted are truth, advertising, and product information. Customers will be empowered to make their own judgements if they are given accurate, truthful, and transparent information on the nutritional value, production processes, quality certifications, and environmental aspects. This is in line with the larger goals of the Sustainable Development Goal (SDG) 12 on Responsible Consumption and Production by promoting knowledgeable consumer choices and inducing a higher level of accountability of the dairy value chain. Increased intake of safe and nutritionally enhanced dairy products also leads to SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), while the growth of premium dairy markets can open up more income possibilities for dairy farmers, processors, and retailers thereby contributing to SDG 8 (Decent Work and Economic Growth).

The outcomes are also highly relevant for horticultural development, increasing consumer trends towards healthier choices, and traceability of food products can stimulate demand for organic foods and vegetables and support the sustainable production of horticultural communities. A consumer-driven demand for certified quality products may encourage producers' and agreed business firms' investment in value addition, branding, and sustainable supply chain management.

Overall, these findings imply that from now on the development of the premium dairy segment will rely not just on making the products cheaper and easier to get, but also on the consumers' understanding of the health, quality and sustainability characteristics of the products. Educational campaigns on consumption, more transparent product communication, and highlighting eco-friendly dairy farming may increase consumer trust and aid in the continued sustainability of the dairy industry. At the same time, premium dairy products might be key in linking health, economic development, and sustainable food systems.

4. Conclusions

The socioeconomic level of customers, the behaviour factors that influence the purchase of high-end dairy products, the main issues that urban consumers in Noida, Uttar Pradesh, confront, etc., are all covered in

this study. First, Garrett's ranking method, multiple regression analysis, and a survey with one hundred respondents were employed. Additionally, the majority of consumers are young, well-educated, and generally well-off, with a significant part being students, according to the report. This indicates that premium dairy products are becoming more and more popular among young people living in cities. According to the research, being health conscious is the factor most significantly associated with purchasing behaviour. Put another way, premium dairy products are more likely to be chosen by consumers that prioritise nutrition, probiotics, and fortified foods. Purchases in the purchase decision list were mostly impacted by advertising and product information; however, perceived quality, brand trust, price perception, and packaging also had favourable but statistically insignificant effects. Garrett found that the main problem was the lack of product variety, followed by high price and the notion that products didn't offer good value for the price. These issues indicate that although consumers are willing to pay more, they opt for better products that have a unique health benefit. Besides, the report indicates that producers may be able to improve their brand image, diversify their product lines, and promote health benefits, while retailers should focus on making products more accessible.

While the research was based on premium dairy products, the changes in consumer behaviour we detected, without doubt, apply also to the horticultural value chains. Health consciousness, a desire for product specifics, and transparency have come to be the main drivers for consumer preferences for premium fruits vegetables organic products, and other horticulture foods. Beyond supporting nutritional security and sustainable food systems, value addition at the certified branding and traceability level can go a long way in helping horticulture enterprises to meet these changing tastes. Among the limitations are the small sample size, use of purposive sampling, and focus on only one urban area. Future research should look at different regions, involve larger samples, do comparative and follow-up studies, and use advanced analytical tools like structural equation modelling to understand consumer behaviour better.

References

- [1] Kumar A, Staal SJ. Is traditional milk marketing and processing viable and efficient? Empirical evidence from Assam, India. *Quarterly Journal of International Agriculture*. 2010;49(3):213–225.
- [2] National Dairy Development Board (NDDB). *Annual Report 2020–21*. Anand, India: NDDB; 2021.
- [3] Goyal A, Singh NP. Consumer perception about branded milk products. *Indian Journal of Marketing*. 2007;37(6):3–10.

- [4] Shyam V, Thakur D. Regulatory aspects of nutraceuticals and functional foods in India. In: Thakur M, Belwal T, editors. *Bioactive Components*. Springer; 2023. Available from: https://doi.org/10.1007/978-981-19-2366-1_10
- [5] Kotler P, Keller KL. *Marketing Management*. 15th ed. Pearson Education; 2016.
- [6] Vermeir I, Verbeke W. Sustainable food consumption: Exploring the consumer attitude–behaviour gap. *Journal of Agricultural and Environmental Ethics*. 2006;19(2):169–194.
- [7] Hoefkens C, Verbeke W, Aertsens J, Mondelaers K, Van Camp J. The nutritional and toxicological value of organic vegetables: Consumer perception versus scientific evidence. *British Food Journal*. 2009;111(10):1062–1077. Available from: <https://doi.org/10.1108/00070700910992916>
- [8] Mukul AZA, Afrin S, Hassan MM. Factors affecting consumers' perceptions about organic food and their prevalence in Bangladeshi organic preference. *Journal of Business and Management Sciences*. 2013;1(5):112–118.
- [9] Fox JA, Hayes DJ, Shogren JF. Consumer preferences for food irradiation: How favourable and unfavourable descriptions affect preferences for irradiated pork in experimental auctions. *Journal of Risk and Uncertainty*. 2004;28(1):75–95.
- [10] Verbeke W. Functional foods: Consumer willingness to compromise on taste for health? *Food Quality and Preference*. 2006;17(1–2):126–131.
- [11] Grunert KG, Bredahl L, Brunsø K. Consumer perception of meat quality and implications for product development in the meat sector. *Meat Science*. 2004;66(2):259–272.
- [12] Jaffry S, Pickering H, Ghulam Y, Whitmarsh D, Wattage P. Consumer choices for quality and sustainability labelled seafood products in the UK. *Food Policy*. 2004;29(3):215–228.
- [13] Pieniak Z, Verbeke W, Scholderer J, Brunsø K, Olsen SO. Impact of consumers' health beliefs, health involvement and risk perception on fish consumption. *British Food Journal*. 2010;112(8):898–915.
- [14] Bus AEM, Worsley A. Consumers' health perceptions of three types of milk: A survey in Australia. *Appetite*. 2003;40(2):93–100.
- [15] Saba A, Messina F. Attitudes towards organic foods and risk/benefit perception associated with pesticides. *Food Quality and Preference*. 2003;14(8):637–645.
- [16] Zhang C, Bai J, Wahl TI. Consumers' willingness to pay for traceable food products: A case study of pork in China. *Food Control*. 2018;91:117–125.
- [17] Chandel N, Wani SA, Lone MA, Alqasem OA, Rather AA, Mir SA, Qayoom D, Nagy M, Mekiso GT, Balogun OS. Strategic vegetable crop distribution in Himachal Pradesh for sustainable economic and environmental outcomes. *Scientific Reports*. 2025;15:19437. Available from: <https://doi.org/10.1038/s41598-025-04212-z>