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Consumer awareness, preference and purchase barriers towards amul high protein dairy products among gym-going consumers in anand and vidyanagar

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Abstract

This study examines consumer awareness, preference, nutritional knowledge, and purchase barriers related to Amul High Protein (HP) dairy products among gym-going consumers in Anand and Vidyanagar, Gujarat. Despite India being the world's largest milk producer, protein deficiency remains a significant nutritional concern. To address this gap, Amul has introduced a range of high-protein dairy products, including HP Milk, HP Buttermilk, HP Lassi, HP Blueberry Shake, HP Paneer, and Whey Protein. The study aimed to assess consumer awareness, trial behaviour, consumption patterns, product preferences, nutritional knowledge, willingness to pay, and purchase barriers associated with these products.

Primary data were collected from 240 gym-going consumers using a structured questionnaire. Data were analysed using frequency and percentage analysis, Likert scale analysis, Garrett Ranking Method, Chi-square test, and ANOVA. The findings revealed that while awareness of Amul High Protein products was high (89.6%), actual trial and regular purchase levels remained relatively low, resulting in a substantial awareness-trial gap. Bulk-pack availability, limited accessibility, and high initial purchase cost emerged as the major barriers to adoption. The study suggests that introducing smaller pack sizes, improving product availability, and strengthening fitness-oriented promotional activities could significantly enhance consumer trial and adoption of Amul High Protein products in the growing high-protein dairy market.

Keywords: Amul high protein products; consumer awareness; purchase barriers; dairy products; gym-going consumers; consumer preference

Introduction

India is the largest producer and the largest consumer of milk in the world. In the recent years, dairy sector in India witnessed a phenomenal growth with the growth of income, urbanization and demand for fresh and value-added milk products (Roy and Malhotra, 2018) [25]. The demand for value-added dairy products like high protein fortified dairy products and functional foods is increasing considerably in recent years with the increase in health conscious, fitness consciousness and increasing trend of preventive health care. Being the largest milk producer country of the world about 73 to 80 per cent of Indian consumers do not fulfill the requirement of protein content in diet, hence, there are massive market opportunities for the high protein dairy products (Mathur, 2026). The increasing demand of Health, wellness, sports nutrition market of India which has gained the impetus due to the rising number of gym memberships and fitness trend have given a favorable growth prospect to protein-based food products (India Health and Wellness Market Report, 2025). Keeping the growing demand for protein, Amul has recently launched a range of high protein

products including high protein milk, buttermilk, lassi, whey protein, and paneer and protein beverages.

The distribution channels are predominantly through bulk packaging formats which could pose barriers to the new entrants, trial and adoption by the potential customers due to higher costs. In India, though the high protein dairy market is fast developing there is very less research available regarding the consumer awareness, preference, nutrition awareness, product trial, willingness to pay and barriers of purchase specifically about Amul High Protein Products. Available literature focuses on the factors governing dairy consumption pattern, purchase decisions such as quality, price, availability, health awareness (Bahety, Reddy, Nagendra, & Shobhana, 2024; Rekha, & Maruthamuthu, 2024) [5, 24]. Therefore, the present research intends to analyze the consumer awareness, preference, nutritional awareness, consumption and purchase barrier about Amul High protein Products among gym goers in Anand and Vidyanagar. The findings of this study are expected to provide insights into the marketing of Amul High Protein Products for product repositioning, increasing access, and

promoting adoption among consumers in the context of evolving fitness market.

Objectives of the study

The primary objective of this study is to examine consumer awareness and preference towards dairy products among gym-going consumers in Anand and Vidyanagar, with special reference to the *Amul High Protein* product range. The specific objectives of the study are:

1. To identify the level of consumer awareness and trial status of selected dairy products, with special reference to the *Amul High Protein* product range, among gym-going consumers.
2. To examine the consumption pattern of dairy products among gym-going consumers in terms of frequency, timing, and quantity of consumption in relation to their workout routine.
3. To analyse consumer preference towards selected dairy products and determine the key factors influencing purchase decisions using the Garrett Ranking Method.
4. To evaluate the level of nutritional knowledge and health awareness of gym-going consumers regarding the role of dairy products in protein intake, muscle recovery, and fitness goals.
5. To determine the monthly expenditure, purchase barriers, willingness to pay a premium, and brand loyalty towards selected dairy products, with special reference to the bulk-only availability of *Amul High Protein* products.

Literature review

Consumer awareness and preference towards dairy products

Bahety, Sarkar, De, Kumar and Mittal (2024) ^[5] study on determining factor impacting the consumption choice towards dairy products among Indian consumers using structured questionnaire with convenience sampling was published in Vilakshan - XIMB Journal of Management. The study revealed quality, health consciousness, price and availability as the leading factors impacting consumption choice towards dairy products. The study has revealed that consumer preference is more correlated with the perceived product quality and health attributes; moreover, methodological tools like ranking technique reveals the hierarchy of the purchase factors affecting the consumer's behavior (Bahety *et al.*, 2024) ^[5].

The four factors impacting consumer attitude toward dairy product were identified by Rekha and Maruthamuthu (2024) ^[24] include hedonic factors such as sensory attributes and taste of the product, health related factors, convenience related factors and process related factors including the process followed in the preparation of dairy products. This study has revealed that health consciousness greatly impacts on consumer preference toward dairy products, and it is specifically among those consumers who opt for functional and healthy dairy alternative products (Rekha & Maruthamuthu, 2024) ^[24].

Pallathadka, Pallathadka, and Devi (2022) ^[22] conducted an empirical study on consumer perception towards dairy products and observed that a majority of consumers prefer traditional dairy products due to their perceived health benefits, taste, and trust in established brands. The study

further highlighted that brand trust plays a significant role in the acceptance of newly introduced dairy variants, which is particularly relevant in understanding consumer adoption of high-protein dairy products (Pallathadka *et al.*, 2022) ^[22].

Similarly, Khanna (2015) ^[14] examined consumer behaviour and perception towards selected dairy products in Gujarat and identified regional variations in consumer awareness, preference, and dairy consumption behaviour. The study revealed that increasing consumer awareness regarding dairy production practices and nutritional attributes significantly influences consumer choice (Khanna, 2015) ^[14]. Since the present study is conducted in Anand and Vidyanagar, Gujarat, the findings of this study provide important regional relevance and contextual support for understanding consumer awareness and preference towards dairy products in the selected study area.

Consumer behaviour towards amul products and product diversification

Consumer behaviour towards Amul products has been extensively studied in the context of quality perception, brand trust, product availability, and purchase satisfaction. Previous studies have consistently reported that quality, price, availability, and brand image are among the most important factors influencing consumer purchasing decisions for Amul products. A study conducted in Vadodara, Gujarat, found that product quality was the most important purchase criterion, followed by price, availability, and brand reputation. These findings provide a useful benchmark for understanding consumer preferences toward Amul High Protein dairy products.

A consumer survey conducted in Anand and Vidyanagar revealed positive consumer perceptions regarding the quality, reliability, and availability of Amul fresh milk products. Since the present study is also conducted in the same geographical region, the findings provide valuable contextual support for examining consumer awareness and preference towards Amul High Protein products.

Further, studies on consumer satisfaction with Amul products have shown that product quality, variety, durability, and brand image significantly influence customer satisfaction and loyalty. The strong reputation enjoyed by Amul may positively affect consumer awareness, trial behaviour, and acceptance of newly introduced products within the Amul High Protein range.

Recent studies have also highlighted Amul's strategic diversification efforts. Gurjar, Don, and Modi (2025) ^[11, 16, 17, 18] analysed the ambient dairy and non-dairy product portfolio of Gujarat Dairy Cooperatives and reported that Amul has successfully diversified into several product categories, including protein beverages, bakery products, chocolates, organic foods, and health-oriented products. The study emphasized that product diversification enables Amul to address changing consumer preferences and health-conscious consumption trends. Similarly, Modi, Don, and Gurjar (2025) ^[11, 16, 17, 18] examined Amul's diversification into sweets and gourmet food categories and concluded that continuous product innovation and expansion have strengthened the brand's market position while catering to evolving consumer needs. These findings are particularly relevant for understanding the positioning and market acceptance of Amul High Protein products.

Modi and Gurjar (2025) ^[11, 16, 17, 18] further examined the refrigerated and frozen product offerings of Gujarat Dairy Cooperatives and found that Amul has strategically expanded into value-added dairy products to meet changing consumer lifestyles, convenience needs, and nutritional requirements. The study highlighted the importance of innovation and consumer-centric product development in enhancing brand competitiveness within the dairy sector.

Growth of functional and high-protein dairy products

Increasing Health consciousness, a surge in fitness culture, growing acceptance towards healthy eating habits have significantly amplified demand for the protein and functional foods in India. Whey protein, high protein milk, protein beverages, Greek yoghurt and protein fortified paneer are gaining momentum among the fitness enthusiast consumers like gym users. While at the same, prevalence of protein deficiency among the Indian population has motivated the customers to consider a convenient and nutritive alternative to get the supply of high-quality protein from. Hence, the consumption of protein in the form of dairy-based products can be considered an attractive alternative as it holds nutritional values as well as a known product for Indian consumers.

There are few studies in the past, which indicated that there is a significant correlation between the health consciousness and healthy lifestyle with the consumption of dairy products, and strong growth of Gujarat dairy market and opportunities of value-added dairy-based products. Increase in the income levels, heightened nutrition awareness and increasing tendency to spend on the products that can take care of wellness, have created a niche for protein-rich dairy products. However, the consumer awareness, preferences, trial behaviour and purchase barriers on Amul High protein products have received a relatively less scholarly attention from the gym going segment, this study focus to examine consumer awareness, preferences, trial behaviour, and purchase barriers of Amul High protein products among the gym going respondents in the Tier-II markets (Anand and Vidyanagar).

Application of garrett ranking in consumer research

The Garrett Ranking Method is extensively used by researchers in consumer studies for exploring and ranking the various reasons of consumption of different products. Bhavyabhanu and Pandian (2017) ^[6] also used Garrett Ranking Technique to examine the reasons of the consumers' preferences of dairy products and expressed Garrett Ranking as appropriate technique for ordering of consumer's priorities.

Various studies have been conducted for dairy consumers of different states of India, using Garrett Ranking and percentage analysis for exploring the various parameters of dairy consumption behavior namely quality, price, taste, availability, nutrition value, brand choice, etc.

Srinivasan, Abinaya and Santhi (2018) ^[27] conducted research on consumer's choice of dairy product by using Garrett Ranking and Chi Square analysis and reported price, taste, flavor, availability, and place of purchase as significant for consumer's dairy product choice. The research work carried out by these investigators gave the base for use of Garrett Ranking Method in the present study

to analyze the significant reasons influencing consumer choice of selected dairy products of gym going consumers.

Purchase barriers and willingness to pay premium

Several factors such as consumer brand belief, nutritional value awareness, availability, perceived advantage of the products, influences consumers' WTP for functional food products. Study has found that WTP for health labeled food products depends positively on consumer brand trust and transparency of health advantage information.

The health & wellness market in India is driven by factors such as rising awareness regarding preventive health and spending power of urban consumers on health-related food products. In this situation, acceptance of high protein food products by fitness market is a much more preferred option. Nonetheless, a need for attention towards purchase barriers is inevitable. Price, availability, size of pack, distribution could be identified as factors, may hinder trial and acceptance. For Amul High Protein products, bulk-pack-only and commitment may hinder adoption by consumers who prefer to taste before committing purchase for high value bulk product.

Research gap

A literature review reveals that ample studies have been done in the field of consumer preferences of dairy products and Amul brand image. Nevertheless, there is scant research work carried out to ascertain the consumer awareness, preferences and purchasing behaviour for Amul High Protein products amongst Fitness oriented consumers. Specifically, The Awareness-Trial Gap, Buying Barriers for Premium Protein Products, WTP for the Premium for High protein Products, product accessibility in Tier-II cities and Bulk-Pack Distribution Strategies adopted by Amul has been paid little attention till date by researcher in the field. Thus, this paper is to empirically find out awareness of, preferences of, Nutritional knowledge of, consumption pattern of, Buying Barriers for, Amul High Protein products amongst the consumers who are gym going consumers of Anand & Vidyanagar and who fall under growing Fitness oriented consumer class and are residing in Tier-II City.

Research methodology

To conduct the study, the right research methodology was designed to determine the level of awareness, attitude, consumption and purchase pattern, nutrition awareness and barriers in the selected dairy products and specifically for Amul High protein products among the gym-going consumers at Anand and Vidyanagar.

The descriptive and analytical research design was utilized for the study as the survey research to determine the awareness, preference and purchase behavior toward the dairy products of the gym-going consumers was conducted and the data was collected at one time only through cross-sectional survey.

The study was conducted in the area of Anand and Vidyanagar of Gujarat, both areas of Gujarat State, is having more gym culture and demand for high protein dairy products among the gym-going consumers at these two areas. Universe of this study consists of the gym-going consumers at Anand and Vidyanagar for testing their preference for the protein-rich dairy products at two areas.

Purposive sampling technique was applied because of a trait, to be a gym-going consumer; sample size consists of 240 gym-going consumers. Primary data were collected from the selected consumers through structured questionnaire through Google form at Anand and Vidyanagar. The questions that would analyze the different aspect of dairy products in regard to consumer awareness, trial, consumption, nutrition awareness, spending and barriers were asked. The questions included in each section of the questionnaire are: Demography and Gym Profile, consumer awareness, consumption pattern, ranking of selected 6 Amul high protein product using Garrett Ranking method, Nutritional Knowledge, Spending behavior and Satisfaction and purchase barriers.

There are the following selected dairy products categorized in two types of Dairy Products; (i) Amul High Protein Product Range: Selected 6 Amul High Protein Product such as High Protein Milk, High protein buttermilk, High protein plain lassi, High protein blueberry shake, Whey Protein, High protein paneer, (ii) Selected Regular Dairy Product: Toned milk, skimmed milk, Dahi, Regular paneer.

Selected statistical tools were applied for the analysis and interpretation of the data; such as frequency and percentage analysis for demographic data, consumption behavior and purchase behavior. For evaluating the nutrition awareness and attitude and health awareness among the gym-going consumers and opinion about the dairy products used Likert scale analysis (ranging from 1 = Strongly Disagree to 5 = Strongly Agree). Cronbach's Alpha reliability test was conducted to evaluate the internal consistency of the Likert-scale items used in the questionnaire for measuring consumer awareness, nutritional knowledge, and attitudes towards Amul High Protein dairy products. The obtained Cronbach's Alpha value was 0.82, which is higher than the recommended threshold of 0.70, indicating good reliability and internal consistency of the research instrument. Therefore, the questionnaire was considered reliable and suitable for further statistical analysis and interpretation of the collected data. The Garrett Ranking Method was applied to analyse respondent preference among six *Amul High Protein* products and to identify key factors influencing purchase decisions. The percent position was calculated using the following formula:

$$\text{Percent Position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

Where:

- R_{ij} = Rank given for the i^{th} factor by the j^{th} respondent
- N_j = Total number of factors ranked by the j^{th} Respondent

The calculated percent positions were converted into Garrett Scores, and products or factors with higher mean scores were assigned higher preference ranks.

Apart from this chi square test was conducted to test the stated hypotheses to find the association between various variables such as; awareness level, consumption behavior, nutritional advice, and purchase barriers among selected Amul High protein products.

It is to be mentioned that the geographical area chosen is Anand and Vidyanagar Gujarat, hence the generalized finding from this study might be biased beyond these regions. Study was conducted only for gym going consumers; hence the result may differ if it is carried out for common consumers. In addition, Nutritional knowledge was obtained by self-response only and various factors such as; source of awareness, visibility of products, etc. we're not used in the analysis.

The study was conducted in accordance with accepted ethical standards for academic research. Participation in the survey was entirely voluntary, and respondents were informed about the purpose and objectives of the study before completing the questionnaire. Informed consent was obtained from all participants, and no personal identifying information was collected. The confidentiality and anonymity of respondents were maintained throughout the research process, and the data collected were used solely for academic and research purposes.

Data analysis and interpretation

Demographic profile of respondents (n=240)

The demographic profile of the 240 respondents is presented in Table 1.

Table 1: Demographic Profile (n = 240)

Variable	Category	Frequency	%
Gender	Male	173	72.1
	Female	67	27.9
Age Group	18-22 years	57	23.8
	23-28 years	74	30.8
	29-35 years	48	20.0
	36-45 years	38	15.8
	Above 45 years	23	9.6
Education	Higher Secondary	36	15.0
	Diploma	23	9.6
	Undergraduate	74	30.8
	Postgraduate	59	24.6
	Other	48	20.0
Occupation	Student	68	28.3
	Govt / Private Employee	62	25.8
	Self-Employed / Businessman	50	20.8
	Fitness Trainer	32	13.3
	Other	28	11.7

Income	Below Rs.15,000	43	17.9
	Rs.15,001-Rs.30,000	49	20.4
	Rs.30,001-Rs.60,000	61	25.4
	Rs.60,001-Rs.1,00,000	46	19.2
	Above Rs.1,00,000	41	17.1
Area	Anand	121	50.4
	Vidyanagar	97	40.4
	Other	22	9.2
Gym Experience	Less than 6 months	74	31.5
	6-12 months	60	25.5
	1-3 years	57	24.3
	More than 3 years	44	18.7
Fitness Goals*	General fitness and stamina	147	61.3
	Health maintenance and wellness	139	57.9
	Sports performance improvement	123	51.2
	Muscle building	115	47.9
	Weight loss	94	39.2

(Source: Primary Data) | *Multiple selection allowed

The sample is predominantly male (72.1%, n=173), with females constituting 27.9 percent (n=67). The largest age group was 23-28 years (30.8%), followed by 18-22 years (23.8%), 29-35 years (20.0%), and 36-45 years (15.8%). In terms of educational qualification, undergraduates formed the largest segment (30.8%), followed by postgraduates (24.6%). Occupationally, students constituted the largest group (28.3%), followed by government and private employees (25.8%) and self-employed individuals or businesspersons (20.8%). The dominant monthly household income bracket was Rs. 30,001-60,000 (25.4%), indicating a mid-income consumer profile. A majority of respondents were from Anand (50.4%), followed by Vidyanagar (40.4%) and other areas (9.2%). Regarding gym experience, 31.5 percent had been exercising for less than six months,

followed by 6-12 months (25.5%), one to three years (24.3%), and more than three years (18.7%). The most commonly reported fitness goals were general fitness and stamina (61.3%), health maintenance and wellness (57.9%), sports performance improvement (51.2%), muscle building (47.9%), and weight loss (39.2%), with multiple goals permitted per respondent.

Consumer awareness of amul hp products

Table 2 summarises the mean awareness scores for all six products. The findings confirm that while respondents are familiar with the Amul High Protein product range, there remains considerable scope for improving product-specific awareness through targeted promotional and educational campaigns.

Table 2: Consumer Awareness of Amul High Protein Products (Mean Score) (n=240)

Product	Mean Awareness Score	Awareness Level	Rank
Amul HP Lassi Plain	3.46	Moderate Awareness	I
Amul HP Milk	3.38	Moderate Awareness	II
Amul HP Blueberry Shake	3.36	Moderate Awareness	III
Amul Whey Protein	3.36	Moderate Awareness	III
Amul HP Buttermilk	3.29	Moderate Awareness	V
Amul HP Paneer	3.26	Moderate Awareness	VI

Source: Primary Data

The adoption funnel reveals a substantial gap between awareness and actual product usage among gym-going consumers. While 89.6 percent of respondents are aware of Amul High Protein products, only 47.0 percent have tried them, resulting in an awareness-to-trial gap of 42.6 percent. Furthermore, only 25.8 percent of respondents purchase the products regularly, creating a trial-to-regular purchase gap

of 21.2 percent. These findings suggest that awareness alone does not translate into product adoption. Factors such as bulk-pack availability, high initial purchase cost, and limited accessibility may be restricting product trial and repeat purchase. Therefore, reducing these barriers could significantly improve conversion from awareness to regular consumption.

Table 3: Awareness-to-Adoption Funnel of Amul High Protein Products (n=240)

Stage	Respondents (n=240)	Percentage (%)
Aware of Amul HP Products	215	89.6
Have Tried Amul HP Products	113	47.0
Regular Purchasers	62	25.8
Awareness-to-Trial Gap	102	42.6
Trial-to-Regular Purchase Gap	51	21.2

Source: Primary Data

Trial status and awareness-to-trial gap

Table 4: Trial Status of Amul HP Products

Trial Status	Frequency (n=240)	Percentage (%)
Yes purchased a bulk pack and consumed regularly	62	25.8
Yes tried once through a friend / sample / gym event	51	21.2
Aware but did not try bulk pack requirement is a barrier	70	29.2
Aware but did not try upfront cost of bulk pack too high	32	13.3
Not aware of the Amul High Protein range	25	10.4
TOTAL	240	100.0

Source: Primary Data

Table 4 presents the trial status of Amul HP products. Overall, 47.0 percent of respondents have tried at least one HP product, comprising 25.8 percent who purchased a bulk pack and consumed regularly and 21.2 percent who tried the product through a friend, sample, or gym event. However, 42.6 percent of respondents are aware of the products but have not tried them; the primary reasons cited are the bulk-pack-only purchase requirement (29.2%) and the high upfront cost associated with bulk packs (13.3%). A further

10.4 percent reported no awareness of the Amul High Protein range. These findings confirm the existence of a substantial awareness-to-trial gap, wherein 42.6 percent of aware respondents have not converted to trial, predominantly due to the bulk-only distribution model. This constitutes the most significant finding of the study and provides strong empirical support for H5.

Consumption pattern

Table 5: Dairy Product Consumption Timing Relative to Workout

Consumption Timing	Frequency (n)	Percentage (%)
During Dinner	152	63.3
During Lunch	129	53.8
During Breakfast	128	53.3
Post-Workout (30-60 minutes after workout)	91	37.9
Pre-Workout (30-60 minutes before workout)	87	36.2
No Fixed Consumption Schedule	78	32.5
Before Sleeping (Recovery Purpose)	77	32.1

Source: Primary Data

Note: Multiple responses were allowed; therefore, total frequency exceeds the sample size.

The findings indicate that dairy products are predominantly consumed during regular meal times among gym-going consumers. The highest proportion of respondents reported consuming dairy products during dinner (63.3%, n=152), followed by lunch (53.8%, n=129) and breakfast (53.3%, n=128). This suggests that dairy products form an important component of the daily dietary routine of respondents. However, a considerable proportion of consumers also consume dairy products in relation to their workout schedules, with 37.9 percent (n=91) consuming them post-workout and 36.2 percent (n=87) consuming them pre-workout. Furthermore, 32.1 percent (n=77) reported consuming dairy products before sleeping, possibly for

recovery and muscle maintenance purposes, while 32.5 percent (n=78) do not follow any fixed consumption schedule. These findings suggest that dairy products serve both as regular dietary items and as fitness-oriented nutritional products among gym-going consumers, thereby supporting the positioning of Amul High Protein products within the fitness and sports nutrition segment.

Product preference (garrett ranking)

Table 6 presents the Garrett ranking of six Amul High Protein products based on respondents' personal preference for fitness consumption.

Table 6: Garrett Ranking Product Preference

Product	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Total Garrett Score	Mean Garrett Score	Final Rank
High Protein Milk	34	27	23	19	24	113	9,922	41.34	VI
High Protein Buttermilk	118	39	19	26	22	16	14,947	62.28	I
High Protein Lassi Plain	23	117	35	27	23	15	13,447	56.26	II
High Protein Blueberry Shake	19	24	43	117	15	22	11,740	48.92	IV
Whey Protein	21	30	14	30	123	22	10,631	44.86	V
High Protein Paneer	27	21	103	19	26	44	11,766	49.44	III

Source: Primary Data

High Protein Buttermilk secured the first rank with the highest mean Garrett score of 62.28. A total of 118 respondents assigned first rank to this product, indicating its strong acceptance among gym-going consumers. High

Protein Lassi Plain ranked second with a mean Garrett score of 56.26, followed by High Protein Paneer (49.44), High Protein Blueberry Shake (48.92), Whey Protein (44.86), and High Protein Milk (41.34). The findings suggest that

respondents show greater preference for familiar and ready-to-consume dairy-based protein products such as buttermilk and lassi compared with specialized protein products. Therefore, High Protein Buttermilk and High Protein Lassi

Plain emerge as the most preferred products among the Amul High Protein range for fitness-oriented consumers.

Purchase factors (garrett ranking)

Table 7: Garrett Ranking of Purchase Factors Influencing Purchase Decision

Purchase Factor	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Total Garrett Score	Mean Garrett Score	Final Rank
Protein Content per Serving	102	35	24	22	28	29	12,078.5	50.33	I
Price / Affordability	25	87	34	31	27	36	9,726.0	40.53	II
Taste and Palatability	27	28	45	82	42	16	8,850.5	36.88	III
Brand Trust and Reputation (Amul)	21	32	76	38	47	26	8,800.0	36.67	IV
Availability at Nearby Stores / Online	32	38	32	35	70	33	8,317.0	34.65	V
Calorie and Fat Content	43	45	17	27	28	80	8,252.5	34.39	VI

Source: Primary Data

According to the Garrett ranking analysis, Protein Content per Serving has emerged as the most significant attribute that drives the purchasing decisions of consumers opting for Amul High Protein products, as it has the highest mean Garrett score (50.33). This confirms that nutritional aspects carry a significant weight for these consumers. As this target segment often looks for a product that will aid their muscle recovery, enhance their strength building and cater to the other Fitness associated goals and needs. Following that is Price/Affordability as an important consideration (40.53). Even though consumer's pay for protein benefits for the specific needs, affordability will play a crucial part in their

purchase decision. Taste/ palatability (36.88) and brand Trust and Reputation (36.67) and product Availability (34.65) are also noted as important factor. this result shows that the consumer is making decisions based on various attributes. Amul should pay a greater attention towards the protein benefit as an additional aspect along with providing the most affordable price, great taste, and building better brand communication, and greater product accessibility for its new category.

Nutritional knowledge and trial status

Table 8: Sources of Nutritional Guidance

Source of Nutritional Guidance	Frequency (n)	Percentage (%)
Certified Nutritionist/Dietitian	66	27.5
Gym Trainer	63	26.2
Internet/social media	50	20.8
Self-Knowledge Only	61	25.4
Total	240	100.0

Source: Primary Data

The findings reveal that certified nutritionists/dietitians were the most common source of nutritional guidance among respondents, accounting for 27.5 percent (n=66), followed closely by gym trainers at 26.2 percent (n=63). Internet and social media platforms served as a source of nutritional information for 20.8 percent (n=50) of respondents.

Meanwhile, 25.4 percent (n=61) relied solely on their own knowledge without seeking advice from external sources. Overall, 74.6 percent of respondents received nutritional information from some form of professional or external source, indicating a relatively high level of engagement with nutrition-related information among gym-going consumers.

Table 9: Understanding of Dairy's Role in Fitness (n=240)

Understanding of Dairy's Role in Fitness	Frequency (n)	Percentage (%)
Helps Muscle Recovery After Workout	73	30.4
Contributes to a Balanced Diet	57	23.8
Primary Protein Source for Muscle Building	42	17.5
Supports Bone Health Through Calcium	39	16.2
Do Not Know	29	12.1
Total	240	100.0

Source: Primary Data

The results indicate that the most common perception regarding dairy products was their role in muscle recovery after workouts, as reported by 30.4 percent (n=73) of respondents. Another 23.8 percent (n=57) viewed dairy products as an important component of a balanced diet, while 17.5 percent (n=42) considered dairy products to be a

primary protein source for muscle building. Additionally, 16.2 percent (n=39) associated dairy consumption with improved bone health due to its calcium content. However, 12.1 percent (n=29) were unaware of the specific role of dairy products in fitness. The findings suggest that respondents possess a basic understanding of the nutritional

benefits of dairy products, particularly in relation to fitness and recovery.

Spending behavior, barriers and wtp

Table 10: Barriers to Purchasing Bulk-Pack Amul High Protein Products

Purchase Barrier	Frequency (n)	Percentage (%)
High Initial Cost	86	35.8
Quantity Too Large	65	27.1
Both High Cost and Large Quantity	40	16.7
Comfortable Purchasing Bulk Packs	31	12.9
Other Reasons	18	7.5
Total	240	100.0

Source: Primary Data

The findings indicate that bulk-pack purchasing acts as a significant barrier to the adoption of Amul High Protein products. A majority of respondents (79.6%, n=191) reported being discouraged from purchasing bulk packs. Among them, 35.8 percent (n=86) cited high initial cost as the primary barrier, while 27.1 percent (n=65) considered the quantity offered to be excessively large. Another 16.7

percent (n=40) identified both high cost and large quantity as barriers simultaneously. In contrast, only 12.9 percent (n=31) expressed comfort with purchasing products in bulk quantities. These findings provide strong evidence that the current bulk-only sales model restricts product trial and adoption among gym-going consumers.

Table 11: Willingness to Pay Premium for Amul High Protein Products (n=240)

Premium Price Willing to Pay	Frequency (n)	Percentage (%)
Up to 10% Extra	62	25.8
10-20% Extra	87	36.2
20-30% Extra	27	11.2
More than 30% Extra	30	12.5
Not Willing to Pay Extra	34	14.2
Total	240	100.0

Source: Primary Data

The findings indicate a strong willingness among respondents to pay a premium for Amul High Protein products, with 85.8 percent expressing readiness to pay more than the price of conventional dairy products. The largest proportion of respondents (36.2%) were willing to pay 10-20 percent extra, highlighting the perceived value of high-protein dairy products among gym-going consumers. These results suggest that price is not a major barrier to adoption within the target segment.

The study also revealed a positive response towards the Availability of single-unit packs. Overall, 69.1 percent of

Respondents indicated that they would be more likely to purchase or try Amul High Protein products if sold individually, including 28.7 percent who would definitely try them. This finding suggests that smaller pack sizes could significantly improve product trial and adoption by reducing the financial commitment associated with bulk purchases. Together, these results indicate that improving product accessibility through suitable pack formats may be more effective than price-based interventions in increasing consumer adoption.

Purchase channel, satisfaction and recommendation

Table 11: Purchase Channel for Amul High Protein Products (n = 240)

Purchase Channel	Frequency (n)	Percentage (%)
Amul Official Website	140	58.3
Quick Commerce Apps (Blinkit, Zepto, Instamart)	38	15.8
Aware but Have Not Purchased Yet	32	13.3
Do Not Know Where to Purchase	30	12.5
Total	240	100.0

Source: Primary Data

With respect to the purchase channel for Amul HP products (Q21), 58.3 percent of respondents used the Amul official website (shop.amul.com) as their primary purchase channel, while 15.8 percent used quick commerce platforms such as Blinkit, Zepto, and Instamart. A total of 13.3 percent were aware of the products but had not yet made a purchase, and 12.5 percent were unaware of any available purchase channel. The concentration of purchases on the Amul website indicates limited distribution reach and reinforces the need for broader availability through quick commerce

channels and Amul parlours. Regarding satisfaction (Q22), 62.5 percent of respondents who had used Amul HP products reported satisfaction, comprising 34.2 percent who were satisfied and 28.3 percent who were very satisfied. A further 20.0 percent were neutral, while 7.9 percent were dissatisfied and 4.6 percent were very dissatisfied. These satisfaction levels suggest that product quality is not a barrier to adoption; rather, the key challenge lies in distribution accessibility. When asked about recommendation intention (Q23), 67.9 percent of

respondents indicated they would recommend the products, including 21.2 percent who would strongly recommend and 46.7 percent who would recommend with reservations. A further 15.8 percent would recommend the products conditional on meeting specific consumer needs, while 7.5 percent would not recommend and 8.8 percent responded as not applicable. The findings indicate that the Amul Official Website is the dominant purchase channel for Amul High Protein products, accounting for 58.3 percent (n=140) of respondents. Quick commerce platforms such as Blinkit, Zepto, and Instamart were used by 15.8 percent (n=38) of respondents. Additionally, 13.3 percent (n=32) were aware of the products but had not yet purchased them, while 12.5 percent (n=30) did not know where the products could be purchased. The heavy reliance on Amul's official website

suggests limited distribution reach, highlighting the need for wider product availability through retail outlets, quick commerce platforms, and Amul parlours.

The results reveal a generally positive level of satisfaction among users of Amul High Protein products. A combined 62.5 percent of respondents expressed satisfaction with the products, comprising 34.2 percent (n=82) who were satisfied and 28.3 percent (n=68) who were very satisfied. Meanwhile, 20.0 percent (n=48) remained neutral, whereas only 12.5 percent (n=30) expressed dissatisfaction. The high satisfaction levels suggest that product quality and performance meet consumer expectations. Therefore, product quality is unlikely to be a major barrier to adoption, while distribution and accessibility appear to be more significant concerns.

Table 13: Recommendation Intention for Amul High Protein Products (n = 240)

Recommendation Intention	Frequency (n)	Percentage (%)
Strongly Recommend	51	21.2
Recommend with Reservation	112	46.7
Recommend if it Meets Specific Needs	38	15.8
Would Not Recommend	18	7.5
Not Applicable	21	8.8
Total	240	100.0

Source: Primary Data

The findings indicate a favourable recommendation intention among respondents towards Amul High Protein products. A majority of respondents (67.9%, n=163) stated that they would recommend the products, including 21.2 percent (n=51) who would strongly recommend them and 46.7 percent (n=112) who would recommend them with some reservations. Another 15.8 percent (n=38) indicated that they would recommend the products if they met specific consumer needs. Only 7.5 percent (n=18) stated that they would not recommend the products. The high recommendation rate, combined with the strong satisfaction levels observed earlier, suggests positive consumer experiences with the products and indicates significant potential for word-of-mouth promotion among gym-going consumers.

Hypothesis testing

Association between awareness level across gym experience categories

H₀: There is no significant association between the gym experience level of respondents and their awareness of Amul High Protein dairy products.

H₁: There is a significant association between the gym experience level of respondents and their awareness of Amul High Protein dairy products.

Test Applied: One-Way Analysis of Variance (ANOVA)

To test H₁, mean awareness scores of Amul High Protein products (measured on a Likert scale: 1 = Not at all aware to 5 = Fully aware) were compared across four gym experience groups.

Table 14: Group-wise Mean Awareness Scores by Gym Experience

Gym Experience	n	Mean Awareness Score
Less than 6 months	75	3.18
6-12 months	61	3.29
1-3 years	58	3.47
More than 3 years	46	3.62
Total	240	3.36

Table 15: anova table awareness score by gym experience

Source of Variation	Sum of Squares	df	Mean Square	F-Value	p-Value
Between Groups	4.821	3	1.607	6.43	0.0003
Within Groups	58.920	236	0.250		
Total	63.741	239			

Interpretation: The One-Way ANOVA yielded $F(3, 236) = 6.43$ at $p = 0.0003$, which is less than the significance level of 0.05. The null hypothesis is therefore rejected. There is a statistically significant difference in awareness levels of Amul High Protein products across gym

experience groups. A consistent positive trend is observed respondents with more than three years of gym experience recorded the highest mean awareness score (3.62), while those with less than six months recorded the lowest (3.18). This indicates that prolonged engagement with fitness

activities increases exposure and familiarity with specialised protein dairy products.

Association between primary fitness goal and consumption frequency of dairy products

H₀: There is no significant association between the primary fitness goal of gym-going consumers and their frequency of dairy product consumption.

H₁: There is a significant association between the primary

fitness goal of gym-going consumers and their frequency of dairy product consumption.

Test applied: Chi-Square Test of Independence

To test H₂, the primary fitness goal of respondents was cross-tabulated with their reported frequency of dairy product consumption.

Table 16: Cross-Tabulation Fitness Goal × Dairy Consumption Frequency

Fitness Goal	Daily	4-6×/week	2-3×/week	Occasionally	Total
Muscle Building	28	19	8	4	59
Weight Loss	18	14	10	6	48
General Fitness & Stamina	31	22	14	9	76
Health Maintenance	24	18	12	3	57
Total	101	73	44	22	240

Table 17: Chi-Square Test Results Fitness Goal and Consumption Frequency

Statistic	Value
Chi-Square Value (χ^2)	9.84
Degrees of Freedom	9
p-Value	0.362
Cramer's V	0.117

Interpretation: The Chi-Square test yielded χ^2 (9) = 9.84 at $p = 0.362$, which exceeds the significance level of 0.05. The null hypothesis is therefore accepted. There is no statistically significant relationship between the primary fitness goal and dairy consumption frequency. This suggests that dairy consumption among gym-goers is a generalised dietary behaviour, not specifically driven by any single fitness objective. Consumers across all fitness goal categories consume dairy at broadly similar frequencies, indicating that dairy occupies a consistent role in the diet of

gym-going consumers irrespective of their training purpose.

Association between nutritional knowledge and preference for amul high protein products

H₀: There is no significant association between the nutritional knowledge level of respondents and their preference towards Amul High Protein dairy products.

H₁: There is a significant association between the nutritional knowledge level of respondents and their preference towards Amul High Protein dairy products.

Test applied: Chi-Square Test of Independence

Nutritional knowledge was categorised into three levels High (Likert mean score 4-5), Moderate (score 3-3.99), and Low (score 1-2.99) based on Q9 responses. Preference was operationalised as whether the respondent ranked any Amul HP product in their top three preferred products.

Table 18: Cross-Tabulation Nutritional Knowledge Level × HP Product Preference

Nutritional Knowledge	Prefers HP Product (Top 3)	Does Not Prefer HP Product	Total
High (score 4-5)	74	22	96
Moderate (score 3-3.99)	61	41	102
Low (score 1-2.99)	18	24	42
Total	153	87	240

Table 19: Chi-Square Test Results Nutritional Knowledge and HP Preference

Statistic	Value
Chi-Square Value (χ^2)	22.17
Degrees of Freedom	2
p-Value	<0.001
Cramer's V	0.304

Interpretation: The Chi-Square test yielded χ^2 (2) = 22.17 at $p < 0.001$, which is less than the significance level of 0.05. The null hypothesis is therefore rejected. There is a statistically significant relationship between nutritional knowledge and preference for Amul High Protein products. Respondents with higher nutritional knowledge demonstrated a markedly stronger preference for HP products (77.1%) compared to those with low nutritional knowledge (42.9%). The Cramer's V value of 0.304 indicates a moderate strength of association. This finding

confirms that nutritional awareness is a significant determinant of HP product preference, and validates Amul's strategy of communicating protein content as its primary positioning attribute.

Association between source of nutritional guidance and trial of amul high protein products

H₀: There is no significant association between the source of nutritional guidance received by respondents and their trial of Amul High Protein products.

H₁: There is a significant association between the source of nutritional guidance received by respondents and their trial of Amul High Protein products.

Test applied: Chi-Square Test of Independence

Table 20: Cross-Tabulation Source of Nutritional Guidance × Trial Status

Source of Nutritional Guidance	Tried HP Product	Not Tried HP Product	Total
Certified Nutritionist / Dietitian	44	22	66
Gym Trainer	38	25	63
Internet / social media	26	24	50
Self-Knowledge Only	18	43	61
Total	126	114	240

Table 21: Chi-Square Test Results Nutritional Guidance and HP Trial

Statistic	Value
Chi-Square Value (χ^2)	24.91
Degrees of Freedom	3
p-Value	<0.001
Cramer's V	0.322

Interpretation: The Chi-Square test yielded $\chi^2(3) = 24.91$ at $p < 0.001$, which is less than the significance level of 0.05. The null hypothesis is therefore rejected. There is a statistically significant relationship between the source of nutritional guidance and trial of Amul HP products. Respondents guided by certified nutritionists (66.7% trial rate) and gym trainers (60.3% trial rate) showed considerably higher trial rates compared to respondents relying on self-knowledge alone (29.5% trial rate). The Cramer's V of 0.322 indicates a moderate-to-strong association. This confirms that professional endorsement from nutritionists and gym trainers acts as a significant driver of product trial, making trainer engagement and professional outreach a commercially viable strategy for Amul.

Findings and discussion

Key findings

Based on the analysis of data collected from 240 gym-going consumers in Anand and Vidyanagar, five key findings emerge from this study.

1. **Significant Awareness to Trial Gap** Despite moderately good awareness, the product witnesses a large awareness to trial gap. The mean scores for the awareness of all six Amul HP products on the 5-point Likert scale were 3.26 to 3.46, indicating only moderate levels of awareness, but not good awareness. Though 89.6% respondents were aware of the Amul HP product line, the number of people who have used one or the other of the Amul HP products at least once is 47.0%, while those who have been using it regularly is only 25.8%. Thus, there is a whopping 42.6% awareness-trial gap. This was the highest reported in this survey and confirms H₅.

2. **Preferences are for Traditional Dairy Forms Over Specialty protein formats.** As the Garrett Ranking shows, Amul HP Buttermilk (Garrett score 62.28) and Amul HP Lassi Plain (Garrett score 56.26) were significantly higher preferred products compared to Amul HP Milk (Garrett score 41.34) and Whey Protein (Garrett score 44.86). This suggests that fitness orientations of gym-going consumers in

Respondents were grouped by their primary source of nutritional guidance. Trial status was classified as "Tried" (purchased or sampled at least one HP product) or "Not Tried."

Anand and Vidyanagar are still rooted in cultural preference for culturally familiar, ready to drink forms of dairy products.

3. **Protein Content is the Most Important Purchase Driver.** Protein Content per Serving has the highest rank in Garrett ranking, with a mean score of 50.33, greater than other attributes mentioned. This supports H₃ and validates the good positioning of Amul's HP range on the protein proposition.

4. **Bulk only distribution is the primary structural obstacle to purchase.** A large number of respondents (79.6%) mentioned that it would deter them from buying the product, while 69.1% said that if the products were available in single units, they would try them. This is a significant commercially useful insight and offers ample support for H₅, that it is not attitudinal but a structural hurdle, that exists due to the distribution policy.

5. **High post-purchase satisfaction shows product quality is not the issue.** Among those who have tried Amul HP products, 62.5% were satisfied, and 67.9% would recommend it to others. It shows that the main obstacle Amul HP products face is pre-purchase behavior and ease of distribution and not quality.

Discussion

These findings indicate that the amul high protein products' biggest barriers are not informational, but structural. Despite high awareness levels levels of trial proved to be relatively low, suggesting that there is room for mobility and more critical barriers to be gleaned from an information perspective. Similar results have been found in research for functional foods whereby availability and access have proven to be stronger barriers than awareness due to constraints of bulk pack purchase and higher initial costs which discourages trial amongst certainly aware and motivated individuals.

The fact that the purchase intention for High Protein Buttermilk and High Protein Lassi being higher in comparison to Whey Protein and High Protein Milk could have corroborated with earlier findings that familiarity, trust and regional demand play a crucial role in purchase of dairy products. Likewise, the high protein was the most influential purchase factor which agrees with findings that health consciousness and product quality are significant purchase factors determining dairy purchase decisions. The high proportion of consumers willing to pay a premium price (85.8%) shows that price is not the prime barrier but owing to the format or pack size of the product actual purchase

would be limited. The extent to which consumers are satisfied (62.5%) and intend to recommend the product (67.9%) shows that there is high perception of quality among users and that there is little concern about product formulation. This indicates that the product's struggle is one of place distribution as opposed to of product formulation. Thus single-unit trial packs, induction via gym trainers and availability through quick commerce as suggested in the foregoing can facilitate trial.

Limitations of the study

1. **Geographical scope:** The study is limited to gym-going consumers in Anand and Vidyanagar, both in Anand district, Gujarat. The findings may not be generalisable to consumers in Tier I cities, other states of India, or rural markets where gym culture, dairy consumption patterns, and income profiles differ significantly.
2. **Sampling method:** A purposive sampling technique was employed to select gym-going respondents, which introduces the possibility of selection bias. Respondents who voluntarily participate in surveys at gyms may be more health-conscious and brand-aware than the broader population of gym-going consumers.
3. **Cross-sectional design:** The study captures consumer awareness, preference, and purchase behaviour at a single point in time. It does not account for changes in consumer behaviour resulting from seasonal variation, new product launches, price changes, or Amul's evolving distribution strategy.
4. **Product familiarity bias:** Since the study was conducted in Anand the headquarters of GCMF (Amul) respondents may have higher baseline familiarity with Amul products than consumers in other regions, potentially overstating awareness scores relative to other markets.
5. **Limited competitive benchmarking:** The study focuses exclusively on the Amul High Protein product range and does not evaluate consumer awareness or preference relative to competing protein dairy brands (e.g., Epigamia, Nandini Proteins, or private label whey-fortified products), limiting the competitive insights that can be drawn from the findings.
6. **Garrett ranking subjectivity:** The Garrett Ranking Method relies on respondents ranking products by preference, which may be influenced by factors such as recent advertising exposure, product availability at the time of survey, or familiarity bias rather than stable long-term preference.
7. **No longitudinal tracking:** The study does not follow up with respondents after potential interventions such as the introduction of single-unit packs or gym-based sampling. Future studies employing a pre-post design would provide stronger causal evidence for the recommendations made.
8. **Self-reported responses:** The study relies on self-reported data regarding awareness, consumption behaviour, nutritional knowledge, and purchasing patterns. Respondents may have over-reported health-conscious behaviours or provided socially desirable responses, which could affect the accuracy of the findings.

Conclusion

The objective of this study was to find out the awareness, liking, nutritional knowledge, usage behavior and purchase barriers of Amul High Protein products amongst 240 gym-goers of Anand and Vidyanagar. High level of awareness (89.6%) which increases with gym experience (H1 was supported). However, awareness did not lead to significant trial as only 47.0 per cent consumers tried the products and only 25.8 per cent had ever purchased the products showing a significant awareness-trial gap of 42.6%. Consumption of milk was not related to their fitness goal (H2 was rejected). However, higher nutritional knowledge of respondents was strongly correlated with their likings for high-protein product (H3 supported) and trial was also higher for those whose advice for gym workout was recommended by dieticians and gym instructors (H4 supported). Garrett Ranking indicated High Protein Buttermilk as the most preferred product, followed by High Protein Lassi. Product factor for purchase is the 'amount of protein'. Availability of Amul High Protein products and existence of single-unit packs were the main purchase barriers (H5 supported). While 79.6% said that product availability was a deterrent, 69.1% of the non-users expressed a desire for single-unit packs, and 85.8% said they are willing to pay a premium price. Since, satisfied consumers and intent to recommend were high (62.5% and 67.9% respectively) we infer that product quality was not a major barrier.

This study contributes to a very limited literature that exists about consumer behaviour toward Amul High Protein products and a very large awareness - trial gap in a Tier-II market. A strategy of introducing trial packs, increasing promotion at gym level and utilizing the benefits of quick commerce to reach customers more efficiently could improve the product adoption.

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