



A Study on the Factors Affecting Purchase Decision for Cheese Analogue Premix in B2B Segment

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Globalization has changed the trend of food consumption in India drastically. Fast foods and processed foods have attracted youngsters to the extent that the ingredients like cheese, mayonnaise, tomato puree and many others have gained extreme popularity. The purpose of this study was to understand the various types of cheese and their alternatives available in the Business to Business (B2B) market with a focus on the types of cheese accepted by the food vendors and their specific properties that are desirable for certain food preparations. The study

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unveils the concept of cheese analogue which is new in this segment and is used as an alternative to dairy cheese. The study was carried out by collecting primary data from 130 food vendors and 5 producers. The research follows a descriptive research design, utilizing a non-probability sampling method, specifically purposive sampling. The results of this study will offer important new understandings of cheese substitutes, consumption patterns, buying behavior and problems faced by producers in the study area.

Keywords: Buying behaviour; purchase decision; cheese; substitute product; food industry; B2B market.

1. INTRODUCTION

The demand for cheese as a food ingredient has increased in recent years, which reflects the expansion of the ready meals industry. As convenience foods continue to gain popularity, cheese has been produced in various forms, including diced, shredded, sliced, and even liquid. Now, the average volume of cheese consumed globally is 1.2kg per annum per person which is much higher than the production. This demand is predicted to have a CAGR (Compound Annual Growth Rate) of 4.6% in 2024 [1]. Thus, the higher demand for cheese cannot be met by milk-based cheese. Also, another issue with dairy-based products is their shorter shelf life and need for refrigeration. These issues led to the development of cheese analogues that are produced by combining different ingredients, such as non-dairy fats or proteins, to create a cheese-like product to satisfy specific requirements. In comparison to cheese substitutes, dairy-based cheese is more expensive [2-4]. Customized formulations enable cheese analogues to have a wide range of functionalities such as flow ability, melt resistance, shred ability, etc. Cheese analogues are mostly utilized in prepared foods like pizza, burgers, sandwiches, and other food preparations [5-7]. The catering industry also uses cheese analogues. Imitation/substitute cheese products arbitrarily are classified into two categories: (a) Filled cheeses and (b) Cheese analogues. Classification may also be based on the ingredients used and the manufacturing procedures followed. Cheese analogues may also be categorized as synthetic, partial dairy and dairy, depending upon whether the fat and or protein components are from dairy or vegetable sources [8-10].

Global cheese production would maintain its upward trend from the previous ten years, increasing by 24% from 2012 to 2020, or 4.9 million MT of cheese [11,12]. The non-dairy cheese analogue segment dominates the

market, accounting for 41.3% of the total cheese analogue market share and is anticipated to grow at a 6.9% CAGR (Compound Annual Growth Rate) from 2022 to 2032 [13]. The greatest market share, which is 25.7%, belongs to the European cheese analogue market. Some of the global prominent players in the cheese analogue market are Groupe Lactalis, Groupe Foods, Miyoko's Kitchen, Lyrical Foods, Ingredient, etc. As per Food Market Association, the cheese analogue market in India is poised to grow at the highest CAGR of 8.7% between 2022 and 2032 [14]. Rapid growth in end-use industries like the food and beverage industry and the HoReCa sector, rising demand for nutritious dairy substitutes and an increase in the prevalence of lactose intolerance are the main drivers of market expansion.

Sakina [15] found that the major problems for Indian food processing industry were a lack of infrastructure for storage, sorting, grading, and post-harvest management, as well as poor road connectivity, access to sea ports and airports, information and marketing links, electricity and cold chain. In addition, absence of comprehensive national level policy on food processing sector, problem in implementation of food safety laws, lack of adequate trained human resource, supply chain hindrances, access to credit, lack of research & development, low adherence to quality standards, packaging cost, taxation issues and raw material constraints found.

Bedarkar and D [16] found that 38% of outlets preferred the Block form of cheese followed by Diced at 28% and shredded at 19%. Indian cheese producers should attain cost-effectiveness to increase profitability. The major problem was less awareness of cheese brands which made the consumers reluctant to accept their cheese and thus communication should be done under a strategic business to business (B2B) promotional plan specifically for the HoReCa segment.

Wahyudi and Asrol [17] consider the factors like price, quantity, delivery, consistency, quality, and availability of raw materials of cheese. They found that the availability of materials, consistency and timely delivery are the most important things in the raw material supply process, so it is very important to assess all suppliers, to maintain production quality, final customer satisfaction and the sustainability of a company.

1.1 Aim of the Study

This study aims to identify the specific types of cheese that food vendors use in a specific area to provide insight into the popularity and preferences of cheese products among food vendors in the study area. Through the study, the authors wish to understand the factors by analysing variables, it can be accomplished to determine the variables that affect producers' buying behaviour when it comes to cheese analogue premixes and the problems faced by them. The study was carried out with the objectives: (i) To identify the types of cheese used by food vendors in the study area (ii) To study the factors affecting the purchase decision of producers for cheese analogue premixes (iii) To identify the problems faced by producers of cheese analogue.

2. METHODOLOGY

The research follows a descriptive research design, utilizing a non-probability sampling

method, specifically purposive sampling. The sample unit consists of a food vendor and a producer. The total sample size comprises 130 food vendors and 5 producers. The samples were collected from Anand, Ahmedabad, Vadodara, and Surat city of Gujarat state. The survey was conducted using a semi-structured research instrument.

3. RESULTS AND DISCUSSION

The study was conducted with a semi-structured schedule and recorded the responses from the respondents. The detailed result analysis was as follows (Table 1).

The highest number 46 (35.38%) of food vendors having the age in 31-40 age group, 34 (26.15%) food vendors having the age in 41-50 age group, 32 (24.62%) food vendors having the age less than or equal to 30 years. Only 18 (13.85%) food vendors were observed to have an age of more than 50 years.

As per the study related to the education profile of food vendors, it found the following responses from the respondents (Table 2).

The highest number of 53 (40.77%) food vendors have studied up to the HSC level. 39 (30.00%) food vendors have done up to the SSC level. 14 (10.77%) food vendors have completed under graduation and the other 14 (10.77%) food vendors have studied primary education. 7 (5.38%) food vendors were illiterate.

Table 1. Age of the food vendors

Age Group (Year)	Frequency	Percentage
≤ 30	32	24.62
31-40	46	35.38
41-50	34	26.15
> 50	18	13.85
Total	130	100

(Source: Field Survey, 2023)

Table 2. Education of the food vendors

Education	Frequency	Percentage
Illiterate	7	5.38
Primary	14	10.77
Up to SSC	39	30.00
Up to HSC	53	40.77
Undergraduate	14	10.77
Postgraduate	3	2.31
Total	130	100

(Source: Field Survey, 2023)

Table 3. Types of cheese used by food vendors

Types of Cheese	Frequency	Percentage
Unbranded	12	9.23
Milk-based	34	26.15
Analogue	84	64.62
Total	130	100

(Source: Field Survey, 2023)

Only 3 (2.31%) food vendors had completed post-graduation education. During the survey, it was observed that; those who have done HSC, undergraduate or post-graduation level education have good knowledge of cheese types and ingredients. Good education level of food vendors was more aware of good cheese ingredients in the study area (Table 3).

The highest of 84 (64.62%) food vendors used cheese analogues because they are comparatively cheaper than milk-based cheese. Cheese analogues have a diverse array of functions such as flow ability, melt resistance, shred ability which is made possible by customized formulations. So, many food vendors used cheese analogues to increase their profit. 34 (26.15%) of food vendors used milk-based cheese because some customers only required milk-based cheese on their plates and for the names of the restaurants or cafes in the study area. Only 12 (9.23%) of food vendors used unbranded cheese (Table 4).

Out of 84 respondents, 46 (54.76%) of food vendors used processed block-type cheese because it has different properties like melt resistance, shred ability, fine texture, etc. Around 25 (29.76%) of food vendors used pizza-type cheese because it has the more stretching ability, flow ability, melting properties, etc. Only 13 (15.48%) of food vendors used both processed block-type and pizza-type cheese analogues according to their requirements.

The Table 5 was analyzed using the Henry Garrett ranking method. The table indicates that for the purchase of cheese analogues for food vendors, the lower price of the product is the most important factor because the cheese analogue price at Rs.320-350/kg, whereas milk-based cheese price is Rs.400-450/kg, followed by product quality in terms of shredding, melting or stretching, good supply or availability of the product, no refrigeration required and shelf life. The shelf-life of analogue cheese is 4 to 6 months, while dairy or milk-based cheese is 1 to 2 weeks.

Table 4. Types of cheese analogue used by food vendors

Types of Cheese Analogue	Frequency	Percentage
Processed block type	46	54.76
Pizza types	25	29.76
Both	13	15.48
Total	84	100

(Source: Field Survey, 2023)

Table 5. Reasons for purchase of cheese analogue by food vendor

Factors	Rank given by respondents					Total	Garrett Score	Rank
	1 st	2 nd	3 rd	4 th	5 th			
Lower price	3225 (43)	1500 (25)	800 (16)	0 (00)	0 (00)	5525	65.77	1
Product Characteristics (shredding/ melting/ stretching)	1875 (25)	2520 (42)	0 (00)	680 (17)	0 (00)	5075	60.41	2
Good supply	1200 (16)	480 (08)	1250 (25)	720 (18)	425 (17)	4075	48.51	3
No refrigeration required	0 (00)	540 (09)	850 (17)	680 (17)	1025 (41)	3095	36.84	4
Longer Shelf-life	0 (00)	0 (00)	1300 (26)	1280 (32)	450 (18)	3030	36.07	5

(Source: Field Survey, 2023)

Table 6. Factors for purchasing premix for producer

Factor No.	Factors	Most Important	Important	Neutral	Less important	Not important
F1	Price	4 (100%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
F2	Quality	3 (75.00%)	1 (25.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
F3	Supplier flexibility	0 (0.00%)	3 (75.00%)	0 (0.00%)	1 (25.00%)	0 (0.00%)
F4	Ingredient	0 (0.00%)	3 (75.00%)	0 (0.00%)	1 (25.00%)	0 (0.00%)
F5	Brand name	0 (0.00%)	3 (75.00%)	0 (0.00%)	1 (25.00%)	0 (0.00%)
F6	Experience	0 (0.00%)	2 (50.00%)	0 (0.00%)	2 (50.00%)	0 (0.00%)
F7	Pack size	0 (0.00%)	1 (25.00%)	0 (0.00%)	3 (75.00%)	0 (0.00%)

(Source: Field Survey, 2023)

Table 7. Rank of factors for purchasing premix

Factor No.	Factors	Weighted Mean	Rank
F1	Price	5	1
F2	Quality	4.75	2
F3	Supplier flexibility	3.5	3
F4	Ingredient	3.5	3
F5	Brand name	3.5	3
F6	Experience	3	4
F7	Pack size	2.5	5

(Source: Table 6)

The table was analyzed by the weighted average mean method. The table shows that for purchasing premix, different factors were analyzed like price, quality, supplier flexibility in terms of availability of premix and payment, ingredients, brand name, experience and pack size. Among five producers, four were ready to

accept premix and price is the most important factor to consider when purchasing premix followed by quality as an important factor, supplier flexibility, ingredient and brand name as neutral factors experience as a less important factor and pack size as a not important factor.

Table 8. Problems faced by the producer

Factors	Rank given by respondents					Total	Garrett Score	Rank
	1 st	2 nd	3 rd	4 th	5 th			
High production cost	225 (3)	60 (01)	0 (00)	0 (00)	0 (00)	285	71.25	1
Raw material supply	75 (01)	120 (02)	50 (01)	0 (00)	0 (00)	245	61.25	2
Price fluctuation of raw material	0 (00)	60 (01)	50 (01)	80 (02)	0 (00)	190	47.5	3
Wastage during production	0 (00)	0 (00)	100 (02)	40 (01)	25 (01)	165	41.25	4
Storage facility for raw material	0 (00)	0 (00)	0 (00)	40 (01)	75 (03)	115	28.75	5

(Source: Field Survey, 2023)

The Table 8 shows that producers generally faced problems like high production costs as the additive used is sometimes imported, followed by irregular raw material supply as the imports take time to clear. They also face problems like price fluctuation of raw materials as it is dependent on exchange rates, which directly impacts the cost of raw materials. The other issues highlighted were wastage during production because sometimes due to technical issues like electricity supply that impact high or low cooking so it may deteriorate the quality of the whole cheese batch and storage facility for raw material because cold storage requires raw cheese.

4. CONCLUSIONS

From the study, it was concluded that 35.38% of food vendors having the age in 31-40 age group and those who have completed HSC, graduated, or post-graduate have good knowledge about cheese and its types with ingredients. 64.62% of food vendors used cheese analogue because it was cheaper than milk-based cheeses. Among them, 54.76% of food vendors used processed block-type cheese because it has different functions like melt resistance, shred ability, fine texture. In the purchase of cheese analogues for food vendors, the lower price of the product is the most important factor because the cheese analogue price at Rs.320-350/kg, whereas milk-based cheese price is Rs.400-450/kg, followed by product quality in terms of shredding, melting, or stretching, good supply or availability of the product, no refrigeration required and shelf life. Among all the producers, the price was the most important factor to consider when purchasing pre-mix, followed by supplier flexibility, ingredient and brand image as important factors and experience as a neutral factor and pack size as a less important factor. Producers generally faced high production costs, followed by raw material supply because some ingredients are imported, so due to the economic situation it was not timely available, price fluctuation of raw materials because of fluctuation in the value of foreign currencies, which directly impacts the cost of raw materials and production costs.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Global Cheese Demand. Retrieved on 25 May 2023.

2. Available:www.statista.com
2. Kotler P, Keller KL. Marketing Management 15th Edition-Global; 2015.
3. McSweeney PL, Ottogalli G, Fox PF. Diversity and classification of cheese varieties: An overview. *Cheese*. 2017;781-808.
4. Raman R. Analysis of cheese market in India. *Journal of Dairy Science*. 2016; 73(12):3570-3582.
5. Fox PF, Guinee TP, Cogan TM, Fox PF, Guinee TP, McSweeney PL. Processed cheese and substitute/imitation cheese products. *Fundamentals of Cheese Science*. 2017;589-627.
6. Gobbetti M, Neviani E, Fox P, Gobbetti M, Neviani E, Fox P. Classification of Cheese. *The Cheeses of Italy: Science and Technology*. 2018;55-60.
7. Kamble SS, Raut RD. Evaluating the factors considered for procurement of raw material in food supply chain using Delphi-AHP methodology-a case study of potato chips processing company in India. *International Journal of Productivity and Quality Management*. 2019;26(2):176-189.
8. Talbot-Walsh G, Kannar D, Selomulya C. A review on technological parameters and recent advances in the fortification of processed cheese. *Trends in Food Science & Technology*. 2018;81:193-202.
9. Tejeda HA, Kim MK. Dynamic price relationships and price discovery among cheese markets. *International Food and Agribusiness Management Review*. 2021;24(1):1-13.
10. Verma A. Competitive Analysis of AMUL Products. *International Journal of Research in Management & Social Science*. 2021;92.
11. Global Cheese Consumption. Retrieved on 25 May 2023. Available:<http://pmfood.dk/>
12. Global Cheese Production. Retrieved on 25 May 2023. Available:<http://pmfood.dk/>
13. Cheese Analogue Market. Retrieved on 25 May 2023. Available:<https://www.foodmarketassociation.com/>
14. Global Cheese Analogue Market Outlook. Retrieved on 25 May 2023. Available:<https://www.foodmarketassociation.com/>
15. Sakina M. The Food Processing Industry in India: Challenges and Prospects. *GAP Interdisciplinarity*. 2019;2(3).

16. Bedarkar A, DD. Analysis of market for preferred cheese in Indian market. European Journal of Molecular & Clinical Medicine. 2020;7(10):4193-4202.
17. Wahyudi S, Asrol M. A Supplier evaluation in the cheese industry. Academic Journal of Manufacturing Engineering. 2022;20(2).

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