

AN EMPIRICAL STUDY ON THE ATTITUDE OF CONSUMERS TOWARDS FROZEN FOOD PRODUCTS

Mr. Kavita Anjaria

Assistant Professor
Department of Public Policy and Governance,
BK School of Professional and Management Studies, Gujarat University
anjariakavit@gmail.com

Abstract

The rapid expansion of the frozen food industry is driven by evolving consumer lifestyles, urbanization, and the increasing demand for convenience. This study investigates consumer attitudes towards frozen food products, analysing key determinants such as quality perception, health concerns, convenience, pricing, and brand preference. The research employs statistical analysis to examine the relationship between demographic variables such as age, gender, and purchasing frequency and consumer preferences. The findings indicate that younger consumers constitute the primary market segment, with convenience and product availability being the most influential factors. However, concerns regarding preservatives, nutritional value, and perceived health risks remain major barriers to adoption. The study underscores the need for frozen food manufacturers and retailers to enhance product innovation, improve labelling transparency, and implement targeted marketing strategies to address consumer concerns. The research concludes that while frozen food products offer convenience and time-saving benefits, companies must focus on quality, transparency, and eco-friendly packaging to enhance consumer satisfaction and loyalty. The findings provide valuable insights for frozen food manufacturers and marketers aiming to align their strategies with consumer preferences and emerging trends in the FMCG sector.

Keywords: Consumer Attitudes, Frozen Food Products, Purchase Behaviour, Convenience Foods, Health Perceptions, Market Trends

INTRODUCTION

The fast-moving consumer goods (FMCG) industry is one of the largest and most dynamic sectors in the global economy, with food and beverages playing a crucial role in its expansion. Among the various segments of the food industry, frozen food products have gained significant traction due to their convenience, longer shelf life, and ability to retain nutritional value. The modern consumer, especially in urban and semi-urban areas, is increasingly shifting towards ready-to-eat (RTE) and ready-to-cook (RTC) food options, driven by fast-paced lifestyles, dual-income households, and evolving dietary habits.

Frozen food products are defined as food items that are preserved through freezing techniques, which slow down microbial growth and enzymatic activity, thereby ensuring product safety and longevity. The category includes a wide range of items such as frozen vegetables, fruits, meat, seafood, bakery products, and full meal options. Technological advancements in food freezing and packaging, such as blast freezing and vacuum sealing, have further improved the quality and safety of these products, making them a viable alternative to fresh food.

Despite the convenience and extended shelf life of frozen food, consumer attitudes toward these products vary significantly. While some consumers appreciate the time-saving benefits and affordability, others remain concerned about nutritional value, preservatives, and overall food quality. Brand perception, pricing strategies, product availability, and promotional offers also play a crucial role in influencing purchasing decisions.

In India, the frozen food market has witnessed substantial growth in recent years, particularly in urban centres. The increasing influence of Western food habits, growth of organized retail, and expansion of e-commerce grocery platforms has contributed to the rising demand for frozen food products. However, cultural preferences, lack of awareness, and misconceptions about frozen food safety continue to act as barriers to widespread adoption.

Given the evolving market dynamics, it is essential to understand the factors influencing consumer attitudes and behaviours toward frozen food products. This study aims to analyse the preferences, motivations, and concerns of consumers in Gujarat, providing valuable insights for frozen food manufacturers, retailers, and policymakers.

LITERATURE REVIEW

Olsen (2004) identified taste, nutritional value, and freshness as critical factors influencing seafood consumption, which can be extended to frozen food products. Consumers are increasingly health-conscious, and these attributes play a vital role in their purchasing decisions.

Bektas et al. (2010) conducted a study in Turkey, revealing that time savings and ease of preparation are the most persuasive arguments for consumers purchasing frozen food products. The study also found that frozen pizza, meat products, and potatoes are among the most popular frozen food items. However, consumers often prefer to freeze vegetables at home rather than purchasing pre-frozen options, indicating a preference for control over food quality and freshness.

James and James (2010) highlighted that while freezing preserves the nutritional value of food, consumers often perceive frozen foods as less healthy compared to fresh alternatives. This perception is partly due to the use of preservatives and additives in some frozen food products.

Ahmed and Khalid (2014) found that consumers in Karachi, Pakistan, are increasingly aware of the health implications of frozen foods, with many expressing concerns about the nutritional content and potential health risks.

Ogba and Johnson (2010) studied the influence of packaging on children's product preferences and found that appealing packaging can sway both children and their parents' buying decisions.

Schroeter (2006) found that price reductions on high-calorie foods led consumers to shift towards healthier frozen food options, indicating that pricing strategies can influence consumer behaviour. **Poudel (2022)** studied consumer buying behaviour in Chitwan, Nepal, and found that low pricing and discounts significantly impact purchase decisions, especially among price-sensitive consumers.

Sen et al. (2021) investigated the factors influencing consumers' purchase of ready-made frozen foods and found that discounts and offers are among the top motivators for purchase. This aligns with the findings of the current study, which reveals that 36% of respondents are more likely to purchase frozen food products when discounts are available.

Arora et al. (2022) studied consumer adoption of frozen foods in Uttarakhand, India, and found that environmental sustainability is a key factor influencing consumer preferences. Consumers are more likely to purchase frozen food products from brands that demonstrate a commitment to sustainability and environmental responsibility.

Alias and Noor (2022) explored the influence of hedonic and utilitarian values of food packaging design on consumer buying decisions. Their findings suggest that packaging that appeals to both emotional and practical needs can significantly enhance consumer satisfaction and loyalty. This is particularly relevant for small and medium-sized enterprises (SMEs) in the frozen food industry, where effective packaging can differentiate products in a competitive market.

The literature review highlights the multifaceted nature of consumer attitudes towards frozen food products. Convenience, health concerns, packaging, pricing, and environmental sustainability are key factors influencing purchasing decisions. As the frozen food industry continues to evolve, understanding these factors will be crucial for manufacturers and marketers aiming to meet consumer expectations and drive growth in this competitive sector. Future research should focus on exploring the impact of emerging trends, such as plant-based frozen meals and meal kits, on consumer behaviour and preferences.

OBJECTIVES

This study aims to analyse consumer attitudes towards frozen food products, focusing on various factors that influence their purchasing decisions. The key objectives of this research are:

1. To study the relationship between the age and the preferred frozen food product.
2. To evaluate the most preferred brand of the frozen food product along with the product.
3. To study the relationship between the frequency of purchase and the discounting factor on frozen food products.
4. To study the effects of frozen food products on the consumers health.
5. To study the satisfaction level of consumers for the frozen food products.

RESEARCH METHODOLOGY

The research methodology for this study is designed to systematically analyse consumer attitudes toward frozen food products, focusing on key factors such as demographic influences, purchasing behaviour, and perceptions of quality, health, and convenience. This section outlines the research design, data collection methods, sampling techniques, and analytical approach employed in the study.

RESEARCH DESIGN

This study follows a **descriptive research design**, aiming to examine the preferences, perceptions, and purchasing patterns of consumers regarding frozen food products. The research is based on both **primary and secondary data sources** to provide a comprehensive understanding of consumer behaviour.

DATA COLLECTION METHODS

The study utilizes **both primary and secondary data**:

- **Primary Data:** The primary data was collected through a **structured questionnaire**, which was distributed to respondents in Gujarat. The questionnaire included **multiple-choice questions, Likert scale statements, and open-ended responses** to gather insights on consumer attitudes, preferences, and concerns related to frozen food consumption.
- **Secondary Data:** The secondary data was obtained from **published research papers, market reports, articles, and online sources** to support the study's findings and provide a broader perspective on the frozen food industry.

SAMPLING METHODOLOGY

- **Sample Size:** The study surveyed **203 respondents** from various demographic backgrounds.
- **Sampling Technique:** A **convenience sampling method** was employed to select participants who regularly purchase or consume frozen food products. This approach was chosen due to its practicality in gathering responses from diverse consumer segments.
- **Sample Area:** The research was conducted across **various cities and regions in Gujarat, India**, to ensure a representative understanding of consumer attitudes in the state.

ANALYSIS AND DISCUSSION

The analysis of the data collected from 203 respondents across Gujarat provides valuable insights into consumer attitudes, preferences, and behaviours towards frozen food products. This section discusses the key findings in relation to the research objectives and the existing literature, highlighting the implications for frozen food manufacturers and marketers.

CHI-SQUARE TEST

H₀: There is no significant association between the Age of the respondents with the most preferred frozen food product.

H₁: There is a significant association between the Age of the respondents with the most preferred frozen food product.

Test Statistics		
	AGE	MOST_PREFERRED
Chi-Square	62.202 ^a	176.374 ^b
Df	3	8
Asymp. Sig.	.000	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.8.		
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 22.6.		

Source: SPSS Output

INTERPRETATION: Here the P value is $0.00 < 0.05$. Thus, the H₀ is rejected which states that the null hypothesis is accepted and there is a significant association between the Age of the respondents with the most preferred frozen food product.

KRUSKAL WALLIS TEST

H₀: There is no significant association between the selection of brands with gender. H₁: There is a significant association between the selection of brands with gender.

Test Statistics ^{a,b}									
	AMUL	ITC	TATA_Q	MC_CAIN	MTR_FOODS	HALDIRAM	BIKAJI	GITS	OTHER
Chi-Square	.246	.369	6.800	.278	.002	.109	2.270	.139	4.080
Df	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.620	.543	.009	.598	.961	.742	.132	.709	.043
a. Kruskal Wallis Test									
b. Grouping Variable: GENDER									

Source: SPSS Output

INTERPETATION: Here the P value is < 0.05 of TATA Q and other brands. Thus, the null hypothesis is rejected and alternative hypothesis H1 is accepted which states that there is a significant association between TATA Q and Other brands with gender. The p value is > 0.05 of the brand Amul, ITC, MC Cain, MTR foods, Haldiram, Bikaji and Gits. Hence, H0 is accepted which states that there is no significant association between brands with gender.

CHI SQUARE TEST

H0(1): There is no significant relation between the Factors influence to purchase.(Brand Image) with the amount spend.

H1(1): There is significant relation between the Factors influence to purchase.(Brand Image) with the amount spend

H0(2): There is no significant relation between the Factors influence to purchase.(Quality) with the amount spend.

H1(2): There is significant relation between the Factors influence to purchase. (Quality) with the amount spend.

H0(3): There is no significant relation between the Factors influence to purchase.(Advertisement) with the amount spend.

H1(3): There is significant relation between the Factors influence to purchase. (Advertisement) with the amount spend.

H0(4): There is no significant relation between the Factors influence to purchase.(Packaging) with the amount spend.

H1(4): There is significant relation between the Factors influence to purchase. (Packaging) with the amount spend.

H0(5): There is no significant relation between the Factors influence to purchase.(Low Pricing) with the amount spend.

H(5): There is significant relation between the Factors influence to purchase. (Low Pricing) with the amount spend.

H0(6): There is no significant relation between the Factors influence to purchase.(Longer Storage) with the amount spend.

H1(6): There is significant relation between the Factors influence to purchase. (Longer Storage) with the amount spend.

H0(7): There is no significant relation between the Factors influence to purchase.(Easy to Cook) with the amount spend.

H1(7): There is significant relation between the Factors influence to purchase. (Easy to Cook) with the amount spend.

H0(8): There is no significant relation between the Factors influence to purchase.(No Wastage) with the amount spend.

H1(8): There is significant relation between the Factors influence to purchase. (No Wastage) with the amount spend.

Test Statistics									
	AMO UNT_ SPEN D	BRA ND_I MAGE	QU AL IT Y	PAC KA GING	ADV ERTI SING	TA ST E	LOW _PRI CIN G	APP EAR ANCE	INFLUEN CE_FRO M_OTHE RS
Chi-Square	172.86 2 ^a	97.32 0 ^b	153 .57 6 ^b	56.4 33 ^b	100.3 25 ^b	93 .6 75 b	154.1 18 ^b	64.26 6 ^b	43.921 ^b
df	3	4	4	4	4	4	4	4	4
Asymp.	.000	.000	.00 0	.000	.000	.0 00	.000	.000	.000

Si									
g.									
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.8.									
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.6.									

Source: SPSS Output

101

INTERPRETATION: Here all the P values are < 0.05, hence H0(1), H0(2), H0(3), H0(4), H0(5), H0(6), H0(7) and H0(8) are rejected. Thus there is a significant relation between the factors influencing to purchase the frozen food products with the amount spend.

MOST PREFERRED FROZEN FOOD PRODUCT

MOST_PREFERRED					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	French fries	77	37.9	37.9	37.9
	Smileys	22	10.8	10.8	48.8
	Paratha	5	2.5	2.5	51.2
	Sweet corns	21	10.3	10.3	61.6
	Nuggets	24	11.8	11.8	73.4
	Cutlets	11	5.4	5.4	78.8
	Cheese ball	28	13.8	13.8	92.6
	Vegetables	14	6.9	6.9	99.5
	Other	1	.5	.5	100.0
	Total	203	100.0	100.0	

Source: SPSS Output

INTERPRETATION: From the above data it can be clearly seen that French Fries is the most preferred frozen food product as 38% of the total respondents prefer it. 13.8% of the respondents prefer Cheese ball. 12% of the respondents prefer Nuggets and the remaining respondents prefer other products.

MOST PREFERRED BRAND

DESCRIPTIVE	
Brand	Percentage
Mc Cain	31
Amul	27
MTR foods	10
ITC	7
Tata Q	6
Haldiram	5
Bikaji	7
Gits	4

INTERPRETATION: From the above data it can be clearly seen that Mc Cain is the most preferred frozen food product where 32% of the respondents prefer it, followed by Amul, MTR foods and so on.

CHI SQUARE TEST

H0: There no significant relationship between the effect of discounts. And the frequency of purchase.

H1: There is a significant relationship between the effect of discounts.and the frequency of purchase.

Test Statistics		
	DISCOUNT_EFFECT_ON_PURCHASE	FREQUENTLY_PURCHASE
Chi-	78.700 ^a	156.626 ^b

Square		
df	4	3
Asym p. Sig.	.000	.000
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.6.		
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 50.8.		

Source: SPSS Output

INTERPRETATION: Here the P value is < 0.05 which states that H_0 is rejected. There is a significant relationship between the effect of discounts. And the frequency of purchase.

Demographic Analysis

The demographic profile of the respondents reveals that the majority (46.8%) are aged between 16-25 years, followed by 26-35 years (26.1%). This indicates that younger consumers are the primary target audience for frozen food products. Additionally, 67% of the respondents are female, suggesting that women play a significant role in purchasing decisions for frozen foods, aligning with **Benkouider (2003)**'s findings that women, especially working women, are more likely to buy frozen foods due to their convenience.

In terms of occupation, 32.5% of the respondents are students, and 31% are housewives. This further emphasizes the importance of convenience and time-saving benefits, as students and housewives often seek quick and easy meal solutions. These findings are consistent with **Bektas et al. (2010)**'s study, which identified time savings and ease of preparation as key motivators for frozen food purchases.

Preferred Frozen Food Products and Brands

French fries emerged as the most preferred frozen food product, with 37.9% of respondents favouring it, followed by cheese balls (13.8%) and nuggets (11.8%). This preference for snack-based frozen foods reflects the growing demand for convenient and ready-to-eat options among younger consumers. The popularity of French fries can be attributed to their widespread availability, affordability, and appeal across different age groups.

In terms of brand preference, **McCain** is the most preferred brand, with 31% of respondents choosing it, followed by **Amul** (27%). This indicates that well-established brands with a strong market presence and reputation for quality are more likely to attract consumers. The preference for McCain aligns with **Thiendej (2015)**'s findings that brand image and packaging significantly influence consumer behaviour in the frozen food industry.

Factors Influencing Purchase Decisions

The study identified several factors that influence consumers' decisions to purchase frozen food products. **Convenience** and **time-saving** were the most significant factors, with 63% of respondents strongly agreeing that frozen foods are easy to cook and 43% highlighting time-saving as a key benefit. These findings are consistent with **Bektas et al. (2010)**'s study, which found that time savings and ease of preparation are the primary reasons consumers choose frozen foods.

Taste is another critical factor, with 37% of respondents strongly agreeing that taste influences their purchase decisions. This aligns with **Olsen (2004)**'s findings that taste is a major determinant of consumer preferences for frozen foods. However, 51% of respondents believe that frozen foods do not taste as good as fresh foods, indicating a potential area for improvement for manufacturers.

Price sensitivity also plays a significant role, with 53% of respondents stating that low pricing is a key factor in their purchase decisions. This is consistent with **Schroeter (2006)**'s findings that price reductions can influence consumers to shift towards healthier frozen food options. Additionally, 36% of respondents reported that discounts and offers significantly impact their purchase frequency, highlighting the importance of promotional strategies in driving sales.

Health and Nutritional Concerns

The study revealed mixed perceptions regarding the health implications of frozen foods. While 50% of respondents believe that frozen foods retain vitamins and minerals, 39% expressed concerns about the potential increase in cholesterol and blood pressure

due to frozen food consumption. Furthermore, 29% of respondents believe that frozen foods can increase the risk of diabetes, and 40% associate them with weight gain. These findings are consistent with **Ahmed and Khalid (2014)**'s study, which found that health concerns are a significant barrier to frozen food consumption.

However, 51% of respondents believe that frozen foods taste as good as fresh foods, indicating that taste is not a major deterrent. This suggests that while health concerns are prevalent, they may not entirely overshadow the convenience and taste benefits of frozen foods. Manufacturers should focus on addressing these health concerns by offering healthier options and transparent labelling to build consumer trust.

Environmental and Packaging Concerns

The study also explored the importance of packaging and environmental sustainability in consumer decision-making. **Country of origin** was considered very important by 43% of respondents, while **ingredient lists** and **expiry dates** were deemed very important by 49% and 75% of respondents, respectively. This highlights the growing demand for transparency and information about the products consumers purchase, aligning with **Alias and Noor (2022)**'s findings that packaging design and information significantly influence consumer behaviour.

Additionally, 30% of respondents were highly influenced by the **packaging** of frozen food products, indicating that attractive and informative packaging can enhance purchase intentions. This is consistent with **Thiendej (2015)**'s findings that packaging is a strategic tool for influencing consumer behaviour in the frozen food industry.

CONCLUSION

The study provides valuable insights into consumer attitudes, preferences, and concerns regarding frozen food products in Gujarat. The findings highlight that convenience, time efficiency, and brand trust are the primary drivers of frozen food consumption, especially among younger consumers and working professionals. The study also identifies significant barriers to adoption, including health concerns, nutritional scepticism, and pricing sensitivity.

The analysis shows that women, particularly working professionals, play a key role in frozen food purchasing decisions, and the 16-25 age group is the most active consumer segment. Brand preference is heavily influenced by perceived quality, attractive packaging, and promotional discounts, while price sensitivity remains a challenge for many consumers. Although frozen food offers a practical alternative to fresh food, concerns about preservatives, artificial additives, and food safety continue to impact consumer trust.

From a market perspective, the study indicates strong growth potential for frozen food in India, particularly with the rising trend of health-conscious consumers seeking organic and preservative-free options. Manufacturers and retailers can leverage these insights to develop targeted marketing strategies, introduce healthier alternatives, and improve transparency in food labelling. To enhance consumer acceptance and trust, frozen food brands should focus on:

1. Educating consumers about the nutritional benefits and safety of frozen food.
2. Innovating product offerings to include healthier, organic, and preservative-free options.
3. Implementing effective pricing strategies to cater to both budget-conscious and premium consumers.
4. Enhancing packaging and labelling to provide clear information on ingredients, storage, and expiration dates.

Overall, this study contributes to the growing research on consumer behaviour in the frozen food industry and offers actionable insights for stakeholders. Future research can explore regional variations in frozen food preferences, the impact of digital grocery platforms, and long-term shifts in consumer behaviour post-pandemic.

REFERENCES

- [1] Olsen, S. O. (2004). Antecedents of seafood consumption behavior: An overview. *Journal of aquatic food product technology*, 13(3), 79-91.
- [2] Kardes, F. R., Posavac, S. S., & Cronley, M. L. (2004). Consumer inference: A review of processes, bases, and judgment contexts. *Journal of consumer psychology*, 14(3), 230-256.
- [3] Ane Schroeter et al. —Determining the impact of food price and income changes on buying behavior *Journal of Health Economics* Volume 27, Issue 1 January 2008.
- [4] Ogba, I. E., & Johnson, R. (2010). How packaging affects the product preferences of children and the buyer behaviour of their parents in the food industry. *Young Consumers*.

- [5] Bektas, Z. K., Miran, B., Uysal, O. K., Gunden, C., & Cankurt, M. (2010). Turkish consumers' attitudes towards frozen foods. *Journal of Food, Agriculture & Environment*, 8(3/4 part 1), 78-85.
- [6] James, S. J., & James, C. (2010). Advances in the cold chain to improve food safety, food quality and the food supply chain. In *Delivering performance in food supply chains* (pp. 366- 386). Woodhead Publishing
- [7] Saifullah, A., Ahmad, N., Ahmed, R., & Khalid, B. (2014). Frozen food revolution: Investigating how availability of frozen food affects consumer buying behavior. *International Journal of Economics, Commerce and Management*, 2(8), 2348-0386.
- [8] Sen, S., Antara, N., & Sen, S. (2021). Factors influencing consumers' to take ready-made frozen food. *Current Psychology*, 40(6), 2634-2643.
- [9] Arora, M., Kumar, R., & Anand, N. (2022). Analysis of frozen food adoption by the consumer in Uttarakhand, a state of India: an inferential statistics approach. *International Journal of Value Chain Management*, 13(1), 88-111.
- [10] Poudel, U. R. (2022). Consumer buying behaviour of frozen foods in Chitwan district. *Nepalese Journal of Management Research*, 2(1), 54-65.