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## Consumer behaviour towards frozen foods in Nagpur city

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### Abstract

This research investigates the purchasing behaviour of consumers regarding frozen foods in Nagpur City, Maharashtra. Amidst rapid urbanization and evolving lifestyles, consumer preferences are shifting towards convenience-based food products. A sample of 100 respondents was surveyed using stratified random sampling across various socio-economic categories. The study highlights that younger age groups, nuclear families, and middle-income consumers are more inclined to purchase frozen food, primarily for its convenience and time-saving attributes. Regression analysis reveals that occupation and family type significantly influence consumption patterns. Findings suggest actionable insights for marketers and policymakers aiming to enhance distribution and tailor marketing strategies in emerging frozen food markets.

**Keywords:** Frozen food, consumer behaviour, Nagpur, urban consumption, regression analysis, convenience foods

### Introduction

The frozen food sector in India has seen rapid growth in recent years, driven by shifting consumer lifestyles, urbanization, and increasing demand for convenient food options. While metro cities like Mumbai and Pune have long embraced frozen foods, emerging urban centres such as Nagpur are now becoming significant markets. Changing dietary habits, a rise in dual-income households, and improvements in cold-chain infrastructure have further accelerated this trend.

Nagpur, a major district in Maharashtra, offers a unique landscape for studying consumer behaviour due to its mix of urban and semi-urban populations, growing literacy, and evolving economic activities. As consumers seek time-saving yet nutritious meal solutions, frozen foods are gaining popularity among working professionals, students, and busy families. However, despite increasing acceptance, the market still faces challenges such as limited cold storage infrastructure, price sensitivity, and cultural preferences for fresh food.

This study investigates consumer behaviour towards frozen foods in Nagpur by analysing demographic factors, preferences, satisfaction levels, and purchasing motivations. It also explores the economic implications, market trends, and logistical requirements that influence the local frozen food sector. The research aims to provide insights that can help businesses tailor their offerings and improve service delivery, while also contributing to broader economic development in the region. The main objectives are to examine the consumption and their views regarding various products, Also the analyzed the factor affecting consumption of frozen food.

### Methodology

This study focuses on analyzing frozen food consumption patterns in Nagpur District, Maharashtra, a rapidly urbanizing area with diverse socio-economic demographics. The research will be conducted over a six-month period (December 2024 to June 2025) to capture seasonal and behavioural variations.

A sample of 100 consumers will be selected using stratified random sampling, based on factors such as age, gender, income, occupation, and education. Data will be collected using structured surveys (both online and offline), covering purchasing behaviour, influencing factors (price, convenience, quality, packaging), and demographic details.

For analysis, tabular and percentage methods along with graphs will be used to identify trends. Additionally, a Multiple Linear Regression Model will be applied to assess the impact of socio-economic factors on monthly frozen food expenditure. The model includes variables such as age, gender, income, occupation, family type, and education, helping to determine their influence on consumer behaviour. To examine the effect of socio-economic factors on frozen food consumption, a Multiple Linear Regression Model is used:  $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$

Y = Monthly frozen food consumption (in Rs.), a= Intercept,  $b_1$ - $b_6$ =Coefficients of independent variables,  $X_1$ =Age,  $X_2$ =Gender (Male = 1, Female=2),  $X_3$ =Monthly Income,  $X_4$ =Occupation (1=Student, 2= Housewife, 3=Govt.Employee, 4=Private Employee, 5=Businessman, 6= Businesswoman),  $X_5$ =Family Type (1=Nuclear, 2=Joint),  $X_6$ =Educational Qualification

## Result and Discussion

The results of the present paper are presented as below. The results are arranged as per the objectives taken.

**Table 1:** Socio-Economic and Demographic Profile of Frozen Food Consumers, (N=100)

Variable	Categories	No. of Consumers
Age	Up to 30	55
	31-50	31
	Above 50	11
Gender	Male	51
	Female	49
Education	Up to Primary	12
	Graduation	68
	Post-Graduation	18
Occupation	Housewife	16
	Student (M/F)	32
	Government Employee	7
	Private Employee	22
	Businessman / Businesswoman	23
Monthly Income (INR)	Up to 25,000	23
	25,001 - 50,000	41
	50,001 - 1,00,000	27
	Above 1,00,000	9
Family Type	Nuclear	79
	Joint	20
Family Members	Up to 3	21
	4-6	63
	More than 6	14
Food Preference	Vegetarian	59
	Non-Vegetarian	43
	Eggetarian	10
	Vegan	1

The socio-economic and demographic profile of frozen food consumers indicates that the majority are young adults up to 30 years of age (55%), followed by those aged 31-50, highlighting a strong preference among the younger population who often seek convenience due to busy lifestyles. The gender distribution is nearly equal, with 51% male and 49% female, suggesting that frozen food consumption is widely accepted across genders. In terms of education, a significant 68% of consumers are graduates, and another 18% are postgraduates, indicating that higher education correlates with greater awareness and acceptance

of frozen food. Occupation-wise, students (32 consumers), business professionals (23), and private employees (22) dominate, reflecting time constraints and lifestyle factors influencing their choices. Most consumers fall within the middle-income bracket (₹25,001-₹50,000), pointing to affordability as a key factor. Furthermore, a large number of consumers belong to nuclear families (79%) with 4-6 members (63%), which aligns with the typical urban household structure where frozen food serves as a convenient option. Regarding food preference, vegetarians form the majority (59%), though non-vegetarians (43%) and eggetarians (10%) also show notable engagement, suggesting that frozen food caters to diverse dietary habits. The data collectively reveals that frozen food is predominantly consumed by young, educated, middle-income individuals living in nuclear families, driven by the need for quick, easy-to-prepare meals suited to modern urban living.

**Table 2:** Consumer Awareness, Spending, and Frequency of Frozen Food Use (N=100)

Category	Subcategory	No. of Consumers
Monthly Expense (INR)	Up to ₹500	19
	₹501-1000	32
	₹1001-1500	20
	₹1501-2000	10
	Above ₹2000	16
Frequency of Use	Daily	3
	Weekly	29
	Monthly	29
	Rarely	38
Sources of Information	Television	47
	Friends / Family	25
	Social Media	18
	Billboards	7
	Radio	0

The analysis of consumer awareness, spending, and usage frequency of frozen food products (N=100) highlights key patterns in consumer behavior. In terms of monthly expenditure, the majority of consumers spend between ₹501 and ₹1000 (32%), followed by ₹1001-₹1500 (20%) and up to ₹500 (19%), indicating that frozen food is a moderately priced item for most users. A smaller segment spends more than ₹2000 (16%), which may represent larger households or consumers with higher purchasing capacity. Regarding frequency, a significant portion of respondents use frozen food either on a weekly (29%) or monthly basis (29%), while 38% reported using it rarely, and only 3% use it daily, suggesting that while frozen food is accepted as a convenient option, it is not yet a daily staple for most households. When it comes to awareness sources, television emerges as the most influential medium (47%), followed by friends and family (25%), and social media (18%), showing that both traditional media and interpersonal communication play a key role in shaping consumer knowledge. Billboards (7%) have limited influence, and radio has no impact (0%), indicating a shift away from older media platforms in driving consumer awareness. These findings suggest that frozen food consumption is primarily influenced by affordability, convenience, and exposure through mass media, particularly television.

**Table 3:** Purchase Motivations and Product Choices (N=100)

Category	Subcategory	No. of Consumers
Reasons for Purchase	Easily Available	37
	Time-Saving	36
	Taste	21
	Perceived Quality	21
	Convenience	20
	Influenced by Friends / Family	4
Preferred Frozen Products	Ready-to-Eat Meals	40
	Vegetables	36
	Fruits	9
	Meat Products	9

The table presents data from a survey of 100 consumers, highlighting their reasons for purchasing frozen products and their preferred types. The most common motivations are product availability (37%) and time-saving benefits (36%), followed by taste and perceived quality (21% each), convenience (20%), and influence from friends or family (4%). When it comes to product preferences, ready-to-eat meals are the top choice (40%), closely followed by frozen vegetables (36%), while frozen fruits and meat products are less favored (9% each). Overall, the data suggests that consumers primarily value convenience, accessibility, and time efficiency when choosing frozen foods.

**Table 4:** Regression result for factors influencing consumer's buying behaviour towards frozen food in Nagpur city

Dependent factors	Coefficients
Intercept	1764.600
Age	14.205
Gender	411.383
Education	-203.899*
Occupation	197.067**
Monthly Income of Family(INR)	0.004
Family type	879.477**
R <sup>2</sup>	0.18

1%	2.374	***
5%	1.664	**
10%	1.292	*

The regression analysis revealed that occupation and family type are statistically significant factors influencing monthly expenditure on frozen food. Consumers engaged in business or private employment and those from nuclear families were more likely to spend on frozen food regularly. Additionally, age and income exhibited moderate influence, indicating that younger individuals and those with higher income levels tend to spend more on frozen food products. In contrast, gender and education were found to have a weaker impact, suggesting that these variables do not play a substantial role in determining frozen food consumption behaviour among the respondents.

## Conclusion

This study highlights the evolving consumer behaviour in Nagpur's frozen food market, driven primarily by urban lifestyles that emphasize convenience and time-saving. The highest preference for frozen foods is observed among young, educated, middle-income individuals from nuclear families. Female students under the age of 30 represent a significant portion of this segment, accounting for 21% of consumption based on occupation. Typically, these

consumers live in nuclear families with 4 to 5 members, have a monthly household income between ₹25,000 and ₹50,001, and follow a vegetarian diet. They spend between ₹501 to ₹1,000 per month on frozen, ready-to-eat meals, which are primarily purchased from supermarkets.

Convenience is the main factor influencing their purchasing decisions, though product quality remains a top priority. Consumers prefer frozen food for its accessibility and time-saving benefits compared to freshly made or dry food. Retailers and marketers aiming to tap into this growing segment should focus on enhancing product variety, ensuring consistent availability, and increasing awareness. Targeted promotions via television and digital platforms can effectively reach this demographic and influence their purchasing behaviour.

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