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Shilpa Shree J

Assistant Professor,
Department of Animal
Husbandry Economics, FBS,
MVC, Chennai, Tamil Nadu,
India

T Ananthi

Assistant Professor, Livestock
Farm Complex, VCRI,
Udumalpet, Tamil Nadu,
India

Factors influencing the purchasing decision and constraints involved in consumption of ice cream

Shilpa Shree J and T Ananthi

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Abstract

Indian consumers are very impulsive in their food habits especially in consuming ice-cream. Ice cream considered as an indulgence product favored by children and adults in India, with a higher degree of brand loyalty visible among adults. The most consumable dairy product is ice cream as it is typically eaten as a snack or dessert. The present study was carried out to assess the factors influencing the purchasing decision and constraints involved in consumption of ice cream in Chennai city. A total sample of 200 consumers of TANUVAS dairy products were selected by a simple random sampling method and a survey method was adopted for the collection of primary data with the help of well-structured and pre tested interview schedule. revealed that the variables family size, monthly family income and presence of children in the family were found to be positively influencing the consumption of ice cream. The constraint analysis revealed that not available in preferred quantity was the major constraint in consumption of ice cream followed by unreliable supply, poor packaging and inconvenient store timings were the major constraint involved in ice cream consumption. This study opens up new grounds for further research in the area of ice cream industry. Further studies can be done to find out implications of other marketing concepts in ice cream sector.

Keywords: Ice cream, Consumption, factors, purchase, decision

Introduction

Dairying in India has come forth as an important sub-sector with an encouraging growth rate of five per cent over the years. It also plays a significant role in changing the social and economic status of people in India by providing a subsidiary source of income. India has emerged as the largest producer of milk with 20.17 percent share in total milk production in the world (Animal Husbandry Policy Note, 2020-21). The milk group forms the bulk of the livestock GVA (Gross Value Added), and its value-output is growing at 13 per cent (Pai, 2020). The total milk production in the country was in steady rise from 1950-51 (17 million tonnes) in the year 1950-51 and it reached 187.7 million tonnes in the year 2018-19 (Basic Animal Husbandry Statistics, 2019). During the post-independence period, the dairy sector showed increase in growth rate (Ashish, 2017) ^[4]. The main product of the study is ice cream, a most consumable dairy products typically eaten as a snack or dessert. Indian consumers are very impulsive in their food habits especially in consuming ice-cream. Ice cream considered as an indulgence product favored by children and adults in India, with a higher degree of brand loyalty visible among adults. India's current Ice cream market is worth Rs 3,000cr, including the unorganized sector which estimated to be approximately Rs 2000cr. It is expected that this market would grow at a compound annual growth rate (CAGR) of 17% between 2012 and 2017. Although, the unorganized sector enjoys a bigger share in the Indian Ice cream market and has deeper penetration in the rural and semi-rural areas in India. India is the most rapid growing ice cream market globally, with ice cream treats fast becoming a part of Indian culture. Indian consumers are turning into regular patrons of ice cream parlours, helping to fuel greater interest in packaged offerings in the country. According to a new report by Canadean, consumption of ice cream for each person in India was the lowest across major global markets in 2013, but is set to rise fast as consumers come to associate ice cream with fun experiences shared with friends and family. Therefore, it is essential to study the various factors associated with ice cream consumption.

Corresponding Author:

Shilpa Shree J

Assistant Professor,
Department of Animal
Husbandry Economics, FBS,
MVC, Chennai, Tamil Nadu,
India

Methodology

For this research work, two retail outlets of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) in Chennai metro city, the capital of Tamil Nadu was purposively selected viz., one at Madras Veterinary College and other at College of Food and Dairy Technology, Koduvalli were selected for the study. From each outlet, 100 dairy product consumers were selected by a simple random sampling procedure thus yielding a total sample size of 200 dairy products consumers for the study. A survey method was adopted for the collection of primary data from consumers with the help of well-structured and pre tested interview schedule. The interview schedule had the demographic and socioeconomic details of the household consumers as factors for the study and consumer preference for dairy products. The data collected from household consumers were tabulated and analyzed. The tools used for the analysis of the data are presented and discussed below.

Functional analysis

In order to assess the interrelationships between consumption of Ice-cream and the socio-demographic factors, as described by Rani *et al.* (1999) [2], Semi-log function was fitted. The functional form was as below:

$$\ln Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \mu$$

Where,

Y = Quantity of ice cream consumed per household per month (in Kgs)

X₁ = Family size in consumption units

X₂ = Age of the head of the household - continuous

X₃ = Educational status of the head of the household (0 - If illiterate; 1 - If primary;

2 - If secondary; and 3 - If College)

X₄ = Family income in Rupees

X₅ = Dummy - Hindu religion (1 - If the household is a Hindu; 0 - otherwise)

X₆ = Dummy - Christian religion (1 - If the household is a Christian; 0 - otherwise)

X₇ = Dummy - Presence of Child in the family (1 - If a family had a child (ren) below 14 years; 0 - otherwise)

X₈ = Dummy - Presence of Aged person (1 - If household with aged person(s) above 60 years; 0 - otherwise)

X₉ = Dummy - Food habit of the family (1 - If non - vegetarian; 0 - otherwise)

X₁₀ = Dummy - Type of family (1 - If nuclear; 0 - joint)

α = Intercept

β_i = Regression coefficients to be estimated

μ = stochastic disturbance term

Garret's Ranking Technique

Garret's ranking technique was adopted to rank the constraints faced by urban consumers in the study area. A list of constraints was given to the consumers to rank it (1 to

13). The constraints are not available in preferred quantity, insufficient supply, unreliable supply, low shelf life, poor accessibility, inconvenient store timings, staff poor attitude, outlet is not open on all the days, comparably expensive, poor taste, poor hygiene, poor shopping environment and poor packaging. The order of merit given by the respondents was converted into ranks (Garret and Woodworth, 1971) [1].

$$\text{Percent position} = \frac{100(R_{ij} - 0.50)}{N_j}$$

Where,

R_{ij} = Rank given for ith factor by jth individual

N_j = Number of factors ranked by jth individual.

The percent position of each rank thus obtained

was converted into scores by referring to table given by Garret. For each reason, the scores of the individual respondents were added together and divided by the total number of respondents for whom scores were given and thus based on the mean scores, the ranks were given. These mean scores for all the reasons were arranged in descending order and the most important reason for the preference of dairy products was ranked first and the least important reason was ranked as the last.

Results and Discussion

Factors influencing the consumption of Ice-cream

In order to examine whether the differences in consumption pattern of Ice-cream could be attributed to variations in the socio-economic factors such as family size, religion, age of the household head, education, income level, presence of aged person, type of family and food habit, a separate semi-log regression function was fitted and exhibited in Table 1. The semi-log functional model showed a good fit with the adjusted R² of 0.666, indicating that 66.60 per cent of variation in the dependent variable was explained by the independent variables incorporated. The ANOVA also exhibited that the model had a good fit with a significant 'F' value of 23.637.

Of the variables used to explain the variation in the consumption of ice cream in Chennai city, family size, monthly family income and presence of children in the family were found to be positively influencing the consumption of ice cream. The results indicated that a unit change in the family size could alter the monthly household consumption of ice cream by 37.50 per cent, from its mean level, *ceteris paribus*. The monthly family income positively influenced the consumption of ice cream by 52.50 per cent from the mean level, which confirms the income elastic demand for milk products, *ceteris paribus*. The per cent variation in the household ice cream consumption as a result of having a child in the family was estimated to be 111.11, *ceteris paribus*. This might be due to the children were highly skewed towards ice cream consumption as the city is hot and humid.

Table 1: Factors influencing the consumption of Ice-cream by urban consumers

Explanatory factors		Explained variables
		Ice cream
Constant		4.144** (0.304)
X ₁	Family size	0.375* (0.180)
X ₂	Age of the household head	0.080 (0.132)
X ₃	Educational status of the household head	0.102 (0.090)
X ₄	Family income	0.525** (0.157)
X ₅	Hindu - dummy	0.047 (0.110)
X ₆	Christian - dummy	-0.157 (0.119)
X ₇	Children in the family - dummy	1.111** (0.130)
X ₈	Aged persons in the family - dummy	-0.035 (0.076)
X ₉	Food habit of the family - dummy	-0.173 (0.118)
X ₁₀	Type of the family - dummy	-0.043 (0.143)
R ²		0.695
Adjusted R ²		0.666
'F' value		23.637**

Constraints involved in consumption of ice cream

The ranks for the constraint involved in consumption of ice cream were collected from the sample household consumers, scores were calculated and compared for their order of importance. Based on the total scores obtained for each constraint, they were ranked and the results are presented in Table 2. The results revealed that not available in preferred quantity was the major constraint in consumption of ice cream followed by unreliable supply, poor packaging and inconvenient store timings were the major constraint involved in ice cream consumption. This indicates that consumers want the product in different quantities and ice cream was in high demand as taste, freshness and safety was major reason for their preference towards ice cream.

Table 2: Constraints involved in the consumption of ice cream

S. No	Constraints	Ice cream	
		Score	Rank
1	Not available in preferred quantity	77.2	I
2	Insufficient supply	72.2	V
3	Unreliable supply	76.0	II
4	Low shelf life	69.4	VIII
5	Poor accessibility	66.0	XI
6	Inconvenient store timings	74.7	IV
7	Staff poor attitude	65.7	XII
8	Outlet is not open on all the days	70.9	VI
9	Comparably expensive	67.1	X
10	Poor taste	70.3	VII
11	Poor hygiene	69.0	IX
12	Poor shopping environment	53.3	XIII
13	Poor packaging	75.4	III

Conclusion

The paper on factors influencing the purchasing decision and constraints involved in consumption of ice cream

revealed that the variables family size, monthly family income and presence of children in the family were found to be positively influencing the consumption of ice cream. The constraint analysis revealed that not available in preferred quantity was the major constraint in consumption of ice cream followed by unreliable supply, poor packaging and inconvenient store timings were the major constraint involved in ice cream consumption. In spite of these limitations this research provides valuable information related to consumer behavior. The behavior of consumers is affected by various factors like price of product, taste, quality and brand image, advertisement, packaging, design etc. This study opens up new grounds for further research in the area of ice cream industry. Further studies can be done to find out implications of other marketing concepts in ice cream sector.

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