



A Study on Dairy Products – A Case Firm at West Godavari District of Andhra Pradesh

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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

The Indian dairy sector plays a vital role in Indian economy and has been showing a tremendous milk production over these 40 years in terms of milk production with the record of largest producer and consumer of dairy products. Milk and milk products are most demanded fast moving consumer goods in the consumer and as the demand increases, still consumers facing lot of problems in buying dairy products. So, this study investigates the constraints faced by dairy consumers and also finds the relationship between consumer's income level and expenditure on dairy products in west Godavari district. The study area was purposively chosen for west Godavari district, Andhra Pradesh with 120 respondents. Garrett ranking and percentage analysis were used to analyze the data for this study. The study found that consumers income level of customer having significant relationship with expenditure on dairy products. The study also conclude that major constraints faced by customers was non availability of door delivery.

Keywords: Consumer; constraints; dairy products.

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1. INTRODUCTION

Dairy is one of most important livestock products, and it can have an impact on people's health [1]. Dairy products are crucial components of the human diet since they are the major source of nutrients. Milk is said to be the nature's most complete food. It is a good source of proteins, as well as vitamins and minerals, including calcium. Milk products are an excellent source of energy.

Over the years, our country has historically conducted dairy farming as a rural cottage industry and semi-commercial dairy farms was actually started in military areas and cooperative unions across the country by the end of the 19th century. Dairy animals supplement the Indian dairy industry, contributing significantly to family food security by providing supplemental income, nutritious food elements and high-quality food concepts, especially among Indian rural households [2]. Dairy products of high quality and low cost are now required in every corner of India. With a cattle population of 535.8 million in 2019-20, India's annual milk production was 187.8 MT, making it the world's largest producer of milk [3].

Dairy industries are advancing for higher quality goods with acquired technology and some remarkable inventions for their products and greater market expansion. Milk production is limited to rural areas, although demand exists throughout the country [4]. Approximately 45 percent of the nation's milk production is consumed as liquid milk [5], while the remaining 47 percent is processed into a variety of traditional products such as curd, butter, butter milk, ghee, khoa, paneer, cheese and ice creams.

The Indian dairy industry is divided into two categories: milk and value-added milk products [6]. The primary significant participants include Gujarat Co-operative Milk Marketing Federation (Anand Milk Union Limited), Karnataka Co-operative Milk Producers Federation Limited (Nandini), Mother Dairy, Tamil Nadu Co-operatives, Saras, Hatsun Products Ltd. and others [7].

Consumer's primary food purchasing choices are influenced by income, education, age and gender. Consumers with a greater level of education and money are more concerned with food safety issues, while the aged and women are more likely to pick safe foods [8]. According

to other research, milk and milk product consumption patterns vary based on the volume of milk produced per family, the geographic setting of the area, the dairy system & market access, seasonality, and fasting time. Similar research has found that socioeconomic and demographic variables of households, such as income, education, household headage, geographical variations, and occupation of the household head, product pricing, and household attitudes, impact consumer choice for milk and milk products.

1.1 Objectives

- To identify the constraints faced by dairy consumers in west Godavari district, Andhra Pradesh
- To analyze the relationship between consumers income level and expenditure on dairy products in west Godavari district.

2. RESEARCH METHODOLOGY

2.1 Selection of Study Area

West Godavari district was chosen as a study area because it is one among the largest districts in Andhra Pradesh and this district contains a greater number of private dairy units as well as Case firm serviceable area is west Godavari districts.

2.2 Selection of Sample Respondents

In total 120 sample respondents were selected the consumers of firm 3 purposively for the study and the data regarding the constraints faced by the consumers in buying dairy products and to study the relationship between income and Expenditure level on dairy products were collected.

2.3 Period of the Study

The study was conducted during April 2022 to May 2022.

2.4 Data Collection and Analysis

Sample respondents who are buying dairy products have purposively been selected and interviewed with a well-structured interview schedule. Income level and amount spend on the dairy products are collected from the sample respondents for finding the relation between income level and expenditure on the dairy products.

The respondents demographic characteristics were assessed using percentage analysis, and the Garrett ranking approach was utilized to determine the constraints experienced by the customers [9]. Customers were asked to rate all ten factors, and the data was then analyzed using the equation.

$$\text{Per cent position} = \frac{100 \times (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Ranking given to the i^{th} attribute by the j^{th} individual
 N_j = Number of attributes ranked by the j^{th} individual

Z Test

The Z test, which is based on normal probability, is used to assess the significance of numerous statistical variables, most notably the mean. In the event of a large sample or when population variance is known, the Z test is often employed to compare the mean of a sample to some predicted mean for the population. In summary, the Z test is used to determine the impact of the independent variable (X) on the dependent variable (Y) [10]. It is utilized to test the hypothesis in this case.

$$Z = \frac{\bar{x} - \mu_0}{\sigma / \sqrt{n}}$$

2.5 Hypothesis

H₀: There is a significant difference in dairy product expenditure among different economic groups in west Godavari district.

H₁: There is no significant difference in dairy product expenditure among different economic groups in west Godavari district.

3. ANALYSIS AND FINDINGS

Table 1 depicted the demographic features of respondent's attitudes toward dairy products. The survey found that male respondents (71.7 percent) be more numerous than female respondents. According to the research, the majority of the respondents (32.5 percent) were between the ages of 35 and 44 years, followed by those between the ages of 45 and 54 (28.1

percent). In terms of marital status, marital respondents (78.3 percent) outnumbered unmarried respondents. Similarly, in terms of family type, joint families (10.8 percent) were lower than nuclear families (89.2 percent). Small family size (55.8 percent) was greater than other types. Finally, the majority of respondents who purchased dairy products were graduates.

Among the respondents, majority of the consumer's monthly income falls under the category of 40000-50000 with a percentage of 34.2. Monthly income of greater than 50000 occupied next with a percentage of 30. Out of 120 consumers, 33 respondents were falls under the category of 30000-40000 (27.5%).

Average weekly expenditure on dairy products:

Among the respondents, majority of the consumer's expenditure were in the category of Rs. 400-550 with a percentage of 61.33 followed by respondents in the category of Rs.550-700. This table indicates the weekly expenditure of the consumers towards the milk and milk products.

Above table indicates the share of expenditure spent towards the dairy products. For example, in the monthly income of Rs. 17250, an expenditure spent towards dairy product holds the percentage of 8.11 i.e., Rs.1400/- per month. Around 6-8% was the average share spent towards the dairy products from the majority of the monthly income categories.

Constraints faced by consumer in buying dairy products:

The study revealed that non-availability of door delivery was the major constraints faced by respondents with a Garrett score of 77.07. Lower shelf life was another major constraint among the respondents. Price is the most important factor for any product. Higher price ranked the third most important constraint with a Garrett score of 72.9 and it was followed by Need to travel longer distance, frequent Non availability of products, poor packaging. Unsuitable quantity, Lack of information on expiry date, nutritional status were the penultimate constraints ranked by the respondents. Poor customer service was ranked last among all the constraints with a score of 37.43.

Table 1. Demographic characters of sample respondents

S. No	Characteristics	No of respondents (120)	Percentage
Gender			
1	Male	86	71.7
2	Female	34	28.3
Age			
1	15-24	12	10.5
2	25-34	26	22.8
3	35-44	37	32.5
4	45-54	32	28.1
5	55< (above)	7	6.1
Occupation			
1	Employee	55	45.8
2	Business	18	15
3	Student	16	13.3
4	Housewife	15	12.5
5	Others	16	13.3
Marital status			
1	Single	26	21.7
2	Married	94	78.3
Family type			
1	Nuclear	107	89.2
2	Joint	13	10.8
Family size			
1	Small	67	55.8
2	Medium	43	35.8
3	Big	10	8.3
Educational status			
1	Illiterate	0	0
2	Primary school	8	6.7
3	Higher secondary	50	41.7
4	Graduation	56	46.7
5	Postgraduate	6	5

Table 2. Average monthly income of the respondents

S. No	Average family income / month	No of respondents	Percentage
1	< 10,000	0	0
2	10,000 – 20,000	4	3.3
3	20,000 – 30,000	6	5
4	30,000 – 40,000	33	27.5
5	40,000 – 50,000	41	34.2
6	< 50,000	36	30
Total		120	100

Table 3. Average weekly expenditure on dairy products

S. No	Average Expenditure (in Rs.)	Arora Buyers (n=75)
1.	< 400	14 (20.00)
2.	400 – 550	49 (61.33)
3.	550 – 700	34 (12.00)
4.	700 – 900	13 (10.88)
5	>900	10 (8.33)
TOTAL		120 (100.00)

Chart 1. Monthly income and expenditure

S. no	Monthly income	Expenditure for monthly	Percentage
1	17250	1400	8.11%
2	26000	1960	7.53%
3	34000	2740	8.05%
4	48000	3000	6.02%
5	65000	3800	5.84%

Table 4. Constraints faced by consumer in buying dairy products

S. No	Constraints	Garrett score	Rank
1	Non availability of door delivery	88.17	I
2	Lower shelf life	86.03	II
3	Higher price	72.9	III
4	Need to travel longer distance	72.87	IV
5	Non-Availability of products	66.12	V
6	Poor packaging	62.22	VI
7	Unsuitable quantity	51.62	VII
8	Lack of information Expiry date, Nutritional information	43.44	VIII
9	Poor customer service	37.43	IX

Z Test

Z calculated value = 34.487*

(**- significant at 1 percent, *- significant at 5 percent)

When the hypothesis was tested, the Z value was not significant at the 1% threshold of significance, hence we accept the alternate hypothesis and reject the null hypothesis. In west Godavari district, there is a considerable disparity in spending on Milk products across income levels. As a result, it was established that the sample respondents chosen for the study purchased Milk products based on their income level.

4. CONCLUSION

According to many researcher results, people's milk and milk product choices are impacted not only by socioeconomic and demographic factors, but also by habit formations, beliefs, attribute knowledge, and marketing mixed variables. This result showed that approximately 6-8% was the average share spent towards the dairy products from the majority of the monthly income categories. The result also shows that non availability of door delivery was major constraints faced by west Godavari district consumers, followed by lower shelf life. Higher price occupies third place in constraints faced by the consumers. So, study recommend to company should develop the strong door delivery channel

also recommend to creating websites for online purchase can attract large level of consumers.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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