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A Study on Consumer Preference towards Indigenous Cow Milk in Coimbatore City

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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 demand for milk from indigenous cows had greatly grown over the time, particularly in India. There is a shift toward the consumption of milk from indigenous cows to milk from cross breed cows for a variety of reasons, including the health benefits and other attributes like taste, quality and freshness. The objective of the study was to understand the consumer buying behaviour and preference for consumption and purchase of indigenous cow milk. Through purposive sampling, data on purchase and consumption was collected between March 2022 and May 2022 from 50 indigenous cow milk consumers in Coimbatore city. Primary data was collected through a well-structured questionnaire. Relative Importance Index and Garett's ranking technique were carried out to analyse the information collected. The study's results revealed that comparatively higher price and less availability of indigenous cow milk was the major limitation for the consumers in purchasing indigenous cow milk and it could be evident that the health benefits of indigenous cow milk was the first factor influencing the sample respondents to purchase and consume indigenous cow milk.

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1. INTRODUCTION

Milk from dairy cows has been regarded as nature's perfect food, providing an important source of nutrients including high quality proteins, carbohydrates and selected micronutrients. More than 95 percent of the cow milk proteins are constituted by caseins and whey proteins. Among the caseins, beta-casein is the second most abundant protein and has an excellent nutritional balance of amino acids [1]. In recent years, a brand-new variety of cow's milk has entered the dairy market and both consumers and marketers are interested in this milk called indigenous cow milk which contains A2 milk protein. In the past, cows only produced milk with the A2 type of beta-casein. But nowadays, A1 proteins make up the majority of the milk sold at the local grocery shops [2]. People who consume indigenous cow milk are less likely to develop ailments including coronary heart disease, Type -1 diabetes, sudden infant death syndrome and autism and they also experience several health benefits like improved bowel movements and less bloating as it does not contain beta casomorphin-7 (BCM7), which is present in cross breed cow milk and exotic cow milk due to its histidine position [3]. As more people are becoming health conscious, the idea of the indigenous cow milk business has once again become popular as people began to understand its advantages. As a result, the market for this milk is also expanding quickly. Recently, a number of dairy businesses in India, both local businesses and some organised players began charging consumers more for indigenous cow milk [4]. As people are highly concerned about their fitness and health, the demand for indigenous cow milk is increasing. There are many factors like quality of the product, health benefits, easy accessibility, product attributes and word of mouth influencing the people to purchase indigenous cow milk [5]. There are also many limitations and constraints faced by the consumers in the purchase of indigenous cow milk. Therefore this study would focus on the consumer buying behaviour, factors influencing and constraints in the purchase and consumption of indigenous cow milk with the following objectives.

1. To study the consumer buying behaviour and factors influencing towards indigenous cow milk
2. To analyze the constraints in the purchase and consumption of indigenous cow milk.

2. REVIEW OF LITERATURE

Revathi [6] studied the consumer satisfaction in peri-urban areas of Trichy for packet milk and revealed that most of the packet milk consumers were satisfied with the attributes like taste, the thickness of milk and the consumers considering the packet milk was suitable for infants and helps in easy digestion. Apart from these factors, packet milk was considered to be good for making curd and milk sweets.

Trung et al. [7] study indicated that affordability and easy availability of milk were the major factors influencing the rural milk consumers in Northern Vietnam.

Klaudia Kurajdova et al. [8] study analysed the psychological and personal factors influencing the consumption and purchase of milk. The result of the study revealed that most of the Slovak respondents purchases milk and very few respondents were non- purchasers. “Taste” was the one strong influencing factor said as a primary attribute by the both purchaser and non-purchaser of milk and it was considered as healthy product by the consumer.

Wasim Ahmed et al. [9] in their study suggested that the accessibility of milk products to retailers and to consumers was not up to the coveted state, the organization needs to strengthen its deals limited time exercises by improving commercials in nearby TV stations, hoardings, daily papers and shows, the study also investigated how people settle on a choice to spend their accessible assets like time and cash.

Huan Quang et al. [10] study examined the factors affecting students’ choice of buying fresh milk in Vietnam. The result of the study concluded that there were five factors affecting the consumer’s decisions, those were product quality, price, advertisement and services, accessibility, and influencing the group’s attitude towards the brand, but most of the students were considering the last three over the first two factors i.e., quality and price.

Merlino et al. [11] studied consumer preference based on certain factors and two different milk consumer groups (fresh pasteurized milk consumers and ultra-high temperature treated milk consumers) were taken for the study. Price, taste, fat content and convenience were the major factors for preferring both the milk and the origin of the product was a specific factor considered by UHT treated milk consumers.

3. MATERIALS AND METHODS

The study was conducted in Coimbatore city of Tamil Nadu with a sample size of 50 indigenous cow milk consumers during a period of 3 months from March 2022 to May 2022. The sampling method used was purposive random sampling. The data was collected through well-structured questionnaire and the information was collected from indigenous cow milk consumers. Relative Importance Index and Garrett's ranking technique were used for analysing and interpreting the data. The Relative Importance Index was used to rank the factors that influence indigenous cow milk consumers to purchase and consume indigenous cow milk.

RII was measured using 5 point Likert scale. Weightage was given in such ways that strongly agree carries 5 points and strongly disagree carries 1 point.

RII was calculated using the following equation.

$$\mathrm{RII} = \frac{5N1+4N2+3N3+2N4+1N5}{A \times N}$$

N_1 - Number of respondents for Strongly Agree
N_2 - Number of respondents for Agree
N_3 - Number of respondents for Neutral
N_4- Number of respondents for Disagree
N_5 - Number of respondents for Strongly Disagree
A (Highest weight) = 5
N (Total No. of respondents) = 50

Garret ranking technique was used to rank the constraints involved in the purchase and consumption of indigenous cow milk.

$$Per\ cent\ position\ = \frac{100 \times (Rij - 0.5)}{Nj}$$

Where,
Rij = Ranking given for the i^{th} factor by the j^{th} respondents

Nj = Number of variable ranked by j^{th} respondents.

4. RESULTS AND DISCUSSION

It could be evident from the Table 1 that, 30 percent of the sample respondents were consuming indigenous cow milk for the period of 2 years to 3 years followed by greater than 3 years (26 per cent), 1 to 2 years (22 per cent), 3 to 6 months (12 per cent), 6 months to 1 year (8 per cent) and less than 3 months (2 per cent). It could be concluded that most of the consumers of indigenous cow milk were buying this milk for a period of 2 to 3 years due to its popularity in recent years for its health benefits.

From the Table 2, it was evident that most of the indigenous cow milk consumers were aware about indigenous cow milk by friends & family members (40.0 per cent) followed by doctor (24.0 per cent), social media (20.0 per cent), television (10.0 per cent), display in retail store (4.0 per cent), newspaper (2.0 per cent) and no sample respondent was aware by radio. It was concluded that indigenous cow milk had became popular with the word of mouth by its consumers.

It was concluded from the Table 3 that, most of the sample respondents of indigenous cow milk were buying 500 ml (50.0 per cent) followed by 1000 ml (34.0 per cent), 250 ml (6.0 per cent), 1500 ml (6 per cent) and 750 ml (4.0 per cent). As the price of indigenous cow milk was comparatively high, most of the consumers were buying only 500 ml of milk. Majority of the sample respondents purchased indigenous cow milk daily (66.0 per cent) followed by alternate days (20.0 per cent). Nearly 12.0 percent of the sample respondents purchased twice a week followed by weekly (2.0 per cent). Nearly 46.0 per cent of the sample respondents were buying 500 ml of milk in a daily basis.

It was understood from Table 4 that, 66.0 per cent of the sample respondents purchased the indigenous cow milk through online followed by dairy store (18.0 per cent), organic store (10.0 per cent) and local vendor (6.0 per cent). Almost all of the indigenous cow milk consumers preferred packed milk (92.0 per cent) followed by loose milk only (8.0 per cent). It could be understood that the major source of loose milk was local vendor and the sample respondents opined that there was a very low possibility of getting loose milk in city and the only source was packed milk.

Table 1. Period of indigenous cow milk consumption by sample respondents

S. No	Period of Consumption	No. of Respondents	Percentage to total
1.	Less than 3 months	1	2.0
2.	3 – 6 months	6	12.0
3.	6 months to 1 year	4	8.0
4.	1 year – 2 years	11	22.0
5.	2 year – 3 years	15	30.0
6.	Greater than 3 years	13	26.0
Total		**50**	**100.0**

Source: Primary data

Table 2. Source of awareness about indigenous cow milk by the sample respondents

S. No	Particulars	No. of Respondents	Percentage to total
1.	Friends/Family members	20	40.0
2.	Social Media	10	20.0
3.	TV	1	10.0
4.	Display in Retail Store	5	4.0
5.	Radio	0	0.0
6.	News Paper	2	2.0
7.	Doctor	12	24.0
Total		**50**	**100.00**

Source: Primary data

Table 3. Purchase quantity and purchase frequency of indigenous cow milk

Quantity (ml/day)	Frequency				
	Daily	Alternate days	Twice a week	Weekly	Total
250 ml	3 (6.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (6.0)
500 ml	23 (46.0)	1 (2.0)	1 (2.0)	0 (0.0)	25 (50.0)
750 ml	0 (0.0)	1 (2.0)	1 (2.0)	0 (0.0)	2 (4.0)
1000 ml	7 (14.0)	6 (12.0)	3 (6.0)	1 (2.0)	17 (4.0)
1500 ml	0 (0.0)	2 (4.0)	1 (2.0)	0 (0.0)	3 (6.0)
Greater than 1500 ml	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	33 (66.0)	10 (20.0)	6 (12.0)	1 (2.0)	50 (100.0)

Source: Primary data

Table 4. Source and preferred form of purchase of Indigenous cow milk

Source	Form of milk		
	Loose milk	Packed milk	Total
Local Vendor	3 (6.0)	0 (0.0)	3 (6.0)
Dairy store	1 (2.0)	8 (16.0)	9 (18.0)
Organic store	0 (0.0)	5 (10.0)	5 (10.0)
Departmental store	0 (0.0)	0 (0.0)	0 (0.0)
Online	0 (0.0)	33 (66.0)	33 (66.0)
Total	4 (8.0)	46 (92.0)	50 (100.0)

Source: Primary data

It could be inferred from the Table 5 that, majority of the indigenous cow milk sample respondents preferred milk sweet (34.0 per cent) followed by ghee (26.0 per cent), paneer (24.0 per cent), curd (8.0 per cent), Ice cream (6.0 per cent) and butter (2.0 per cent).

The Relative Importance Index values presented in Table 6 indicated that healthiness, milk freshness, family member's likeliness, quality and door delivery were the relatively important factors which come under the first five ranks with RII scores of 0.880, 0.756, 0.748, 0.740 and

0.712 respectively for influencing consumer preference for indigenous cow milk. The other factors were also included in the study. Traditional milk, doctor's suggestion, tastes good, suggested by friends, reasonable price, accessible, attractive packaging, certified milk and advertisement were the other factors influencing the consumer preference for indigenous cow milk.

The results from Table 7 showed that, 75.04 per cent of the sample respondents reported that high price of the indigenous milk was the main constraint followed by high demand of milk (61.36 per cent) were the most limiting attribute that influences the consumers in deciding to purchase and consume indigenous cow milk.

Long distance travel to purchase milk (49.94 per cent), low quality milk (42.08 per cent), soreness of milk (37.24 per cent) and difficult to differentiate indigenous cow milk from cross breed cow milk (34.34 per cent) were the other constraints in this order in purchase and consumption of indigenous cow milk. Consumers opined that there was a huge demand for indigenous cow milk but the production of it was low. Therefore, as the indigenous cow milk availability was less, it takes long distance to buy this milk.

Table 5. Indigenous cow milk product preference

S. No	Milk products	No. of Respondents	Percentage to total
1.	Paneer	12	24.0
2.	Curd	4	8.0
3.	Butter milk	0	0.0
4.	Ice cream	3	6.0
5.	Butter	1	2.0
6.	Cheese	0	0.0
7.	Milk sweet	17	34.0
8.	Ghee	13	26.0
Total		**50**	**100.0**

Source: Primary data

Table 6. RII of factors influencing the consumer preference for indigenous cow milk

S. No	Factors	RII	Rank
1.	Healthy	0.880	**I**
2.	Milk freshness	0.756	**II**
3.	Liked by family members	0.748	**III**
4.	Quality	0.740	**IV**
5.	Door delivery	0.712	**V**
6.	Traditional milk	0.708	**VI**
7.	Doctors suggestion	0.704	**VII**
8.	Tastes good	0.692	**VIII**
9.	Suggested by friends	0.688	**IX**
10.	Reasonable price	0.588	**X**
11.	Accessible	0.568	**XI**
12.	Attractive packaging	0.564	**XII**
13.	Certified milk	0.528	**XIII**
14.	Advertisement	0.348	**XIV**

Table 7. Constraints in purchase and consumption of indigenous cow milk

S. No	Constraints	Average Score	Rank
1.	High Price	75.04	**I**
2.	High demand	61.36	**II**
3.	Long Distance	49.94	**III**
4.	Low quality milk	42.08	**IV**
5.	Soreness of milk	37.24	**V**
6.	Difficult to differentiate	34.34	**VI**

5. CONCLUSION

Majority of the sample respondents were aware of indigenous cow milk by their friends and family members followed by doctor's suggestion. Most of the respondents were buying only 500 ml of indigenous cow milk as it was costlier than cross breed cow milk and majority of the respondents were buying through online app as indigenous cow milk was considered as a premium product and these premium milk consumers were expecting door deliveries. Family member's likeliness, quality of the milk, freshness of the milk, health benefits and door delivery were the highly influencing factors for consuming indigenous milk. Most the sample respondents felt that high price of this milk was the first constraint in purchasing and as the demand for this milk was high, the availability and accessibility of indigenous cow milk was less and so considered as an important constraint.

CONSENT

As per international standard or university standard, Participants' 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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