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A Study on Consumer Preference for Coconut Milk in Bangalore 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

Aims: This study aimed to analyze consumer preferences for coconut milk, exploring association between consumer profiles and demographics. Additionally, it investigated factors that influenced buying behaviour of coconut milk consumers. The study provided insights into consumer education, income, age, and gender profiles concerning coconut milk, offering an understanding of the brands they preferred. Factor analysis revealed the forces shaping consumers' coconut milk purchase choices and brand preferences. These findings provided practical insights for refining producer and marketer strategies to meet consumer demands and enhance competitiveness in a dynamic market landscape.

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Study Design: Descriptive research design.
Place and Duration of Study: The research was carried out in Bangalore City, during July 2023, primary data was collected from a random sample of respondents.
Methodology: The study specifically targeted a sample size of 60 consumers. A well-structured questionnaire was used to collect data from the sample respondents. The study deployed Factor analysis to assess the factors that influence the consumer purchase Behaviour of coconut milk and priorities regarding various attributes of coconut milk.
Results: This study indicated that the majority of respondents were female (68.30%). The largest age group was 26-35 years (43.30%), and most respondents had an annual income of ₹6.00 lakhs - ₹8.00 lakhs (30%). About half of the respondents held Bachelor's degrees (50%), and the majority were employed (66.60%). Factor analysis provided that External perception factors comprised three factors namely Brand reputation, Availability, and Packaging with a variance of 32.378 percent that were the most influenced factors for the purchase of coconut milk by consumers.
Conclusion: Analyzing consumer profiles factor analysis provided vital insights for the coconut milk industry. These findings offer guidance for refining producer and marketer strategies to meet consumer demands and excel in a rapidly changing market environment. Tailoring product availability, packaging, pricing, and sustainability, in alignment with consumer preferences will effectively improve reach and meet consumer expectations in the coconut milk market.

Keywords: Coconut milk; demographics; retailer preference; brand preference; stocking decisions.

1. INTRODUCTION

India holds the title of being the largest global coconut producer, contributing around 31% of the world's production in 2020. This sector significantly impacts India's economy, with its output valued at ₹26,327 crore in 2020-21 and exports bringing in ₹3,237 crore in 2021-22. Over 12 million people find livelihood and jobs in this sector. Though coconut production decreased by 7.2% in 2021-22, its multifaceted uses offer employment and income opportunities. The term 'Kalpavriksha' (tree of heaven) aptly describes the coconut palm due to its all-encompassing utility. Kerala, Karnataka, Tamil Nadu, and Andhra Pradesh lead in coconut production, accounting for 89% of the area and 90.60% of the national output [1].

Globally, coconut production was 65,671 million nuts in 2020, with Asia-Pacific countries like India, the Philippines, and Indonesia being the top producers. India's share of global production slightly rose to 30.9% in 2020, while the shares of Indonesia and the Philippines slightly changed [2].

Coconut milk is a nutritious emulsion extracted from grated coconut kernel. It's obtained by manually or mechanically extracting coconut meat, with or without water. This vegan alternative to dairy milk is lower in carbohydrates and doesn't contain lactose, making it suitable for lactose-intolerant individuals or those preferring non-dairy options. Compared to whole dairy milk, canned coconut milk is higher in calories and fat, but the plant-based saturated fat it contains might offer unique health benefits. The milk's composition varies based on water content during extraction, impacting moisture and fat levels. Fresh coconut milk has a pH of 6 and is rich in proteins like albumin, globulin, prolamin, and gluten [2].

In India, particularly Kerala stands out as a significant coconut-growing state in terms of both area and production. However, the coconut industry faces income fluctuations due to unstable prices, necessitating strategies for survival in the economy. Diversification and value addition emerge as favorable approaches to enhance market awareness of value-added coconut products. This study assessed customer perception regarding selected value-added coconut products and evaluated the market potential for such products. The value-added offerings included coconut oil, coconut milk, coconut milk powder, coconut palm jaggery, coconut chips, coconut vinegar, and Neera. The findings indicated that while coconut oil possessed substantial market potential, the market prospects for coconut milk and coconut milk powder are relatively limited (Mohanan M 2006).

The utilization of a blend of soymilk (50%) and coconut milk (50%) to create soy-coconut yogurt. This approach resulted in a delightful and nutritious yogurt product using coconut milk Belewu et al. [3].

Consumer behavior is classified into four distinct groups. These groups include situational factors, which involve aspects like store environment, social circumstances, timing, purchase rationale, and mood. Personal factors encompass personality, self-perception, gender, age, family life stage, and lifestyle. Psychological factors encompass motivation, perception, learning, and attitude. Lastly, societal factors consist of culture, subcultures, social class, reference groups, opinion leaders, and family [4].

Sivathanu [5] identified demographic characteristics which impacted the consumer preference for buying organic food products, females had high preference for organic food products compared to males, educated people, and people in the age group of 29-39, and higher-income people preferred to buy organic food products. He also concluded that consumers' preference towards the buying of organic food products was based on their health and safe, nutritious, and grown in an environment-friendly manner.

The study focused on consumer behavior within the Tirunelveli region of Tamil Nadu, and aimed to uncover the timing, methods, motivations, preferred brands, and purchasing locations of products. Additionally, they explored perceptions of motorcycle quality and identified the factors driving motorcycle purchase decisions. The analysis revealed that customer satisfaction and buying behavior were influenced by cultural, social, personal, and psychological factors [6].

1.1 Theoretical Framework

Factor analysis is a statistical technique that focused on the relationships between variables without categorizing them as 'dependent' or 'independent'. In this study, factor analysis served two main purposes: firstly, to condense the data while preserving its essential information, and secondly, to merge highly correlated variables into a single factor [7-10]. As a result, the initial dataset was condensed into a smaller number of factors that were mostly independent or had minimal correlations among them. The technique helped to identify the underlying dimensions that grouped variables into factors.

Factor analysis Model

$$Xi = A_{ij}F_1 + A_i2F_2 + Ai_3F_3 + \text{----------} + A_{im}F_m + V_iU_i$$

Where,

X_i = i th standardized variable
A_{ij}= standardized multiple regression coefficients of the variable on common factor j
F= common factor
V_1= standardized multiple regression coefficients of the variable on unique factor i
U_i= Unique factor for variable i
m = number of common factors

The unique factors are uncorrelated with each other and with common factors. The common factors themselves can be a linear combination of the observed variables.

$$Fi = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + \text{----------} + W_{ik}X_k$$

Where,

F_i = estimate of i th factor
W_i = weight or factor score coefficient
K = several variables.

It is possible to select weights or factor score coefficients so that the first factor explained the largest portion of the total variance. Then a second set of weights can be selected so that the second factor accounted for most of the residual variance subject to being uncorrelated with the first factor [11-14].

2. METHODOLOGY

The research was carried out in Bangalore City. The reason for choosing Bangalore city was that the city is filled with busy working individuals who seek quick and easy cooking options. With the fast-paced lifestyle and the demand for instant choices, this study aimed to understand why coconut milk, a convenient cooking solution, is becoming popular and to understand consumer preference towards different brands of coconut milk. The study specifically targeted a sample size of 60 consumers. A well-structured questionnaire was used to collect data from the sample respondents. The study's reference year is 2023. During July 2023, primary data was collected from a random sample of respondents.

Simple percentage analyses were worked out to study the general characteristics of the sample consumers like age, educational status, occupation, Income, etc. Factor analysis was used to analyze the factors influencing the buying behaviour of coconut milk consumers.

3. RESULTS AND DISCUSSION

3.1 Gender

From Table 1, it could be inferred that male respondents accounted for 31.60 per cent and female respondents accounted for 68.30 per cent.

3.2 Age

It could be observed from Table 2 that the majority of the respondents 43.30 per cent were 26-35 years, followed by 46-55 years group about 25 per cent, 20 per cent of respondents in the age group 36-45 years, 6.60 per cent of respondents in the age group of 18-25 years and 5 per cent of respondents were 56 years and above.

3.3 Education

From Table 3 it could be inferred that 50 per cent of the respondents were having the qualification of a Bachelor's degree, followed by Twenty per cent of the respondents were Master's degree graduates. About 23.20 per cent of the respondents attended High school. 3.30 per cent of respondents were below high school and 6.6 per cent have Doctoral degree.

3.4 Annual Income

It could be observed from Table 4, that 30 per cent of sample respondents' annual income was less than 6 lakhs followed by 30 per cent of sample respondents with an annual income of ₹6.00 lakhs - ₹8.00 lakhs, 21.66 per cent of sample respondents with annual income above ₹12lakhs, 16.66 per cent of sample respondents with the annual income of ₹8.00 lakhs - ₹10.00 lakhs and 15 per cent of sample respondents with the annual income of ₹10.00 lakhs - ₹12.00 lakhs.

3.5 Occupation

From Table 5, it could be inferred that 68.20 per cent of the respondents were employed, followed by homemaker (25 per cent), and self-employed (6.60 per cent).

Table 1. Gender of the sample respondents

S. No	Gender	Number of respondents	In Per cent
1	Male	19	31.60
2	Female	41	68.30
Total		60	100.00

Table 2. Age of the sample respondents

S. No	Age (in Years)	Number of respondents	In Per cent
1	18-25	4	6.60
2	26-35	26	43.30
3	36-45	12	20.00
4	46-55	15	25.00
5	56 and above	3	5.00
Total		60	100.00

Table 3. Educational Status of the sample respondents

S. No	Educational Level	Number of respondents	In Per cent
1	Below high school	2	3.30
2	High school	14	23.20
3	Bachelor degree	30	50.00
4	Master degree	12	20.00
5	Doctoral Degree	2	6.60
Total		60	100.00

Table 4. Annual income of the sample respondents

S. No	Annual income (in Rs)	Number of respondents	In Per cent
1	<₹6.00 lakhs	7	11.66
2	₹6.00 lakhs - ₹8.00 lakhs	18	30.00
3	₹8.00 lakhs - ₹10.00 lakhs	13	16.66
4	₹10.00 lakhs - ₹12.00 lakhs	9	15.00
5	Above ₹12lakhs	13	21.66
Total		60	100.00

Table 5. Occupational status of the sample respondents

S. No	Occupational Status	Number of respondents	In Per cent
1	Employed	41	68.20
2	Homemaker	15	25.00
3	Self- Employed	4	6.60
Total		60	100.00

3.6 Factors Influencing Consumer Preferences

Factors influencing the purchase of coconut milk by consumers were investigated using exploratory factor analysis. Two tests were run to assess whether the data could be used for factor analysis: the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. These tests were used to determine whether there was a statistically significant link between the variables**.**

3.6.1 KMO and Bartlett's test of confirmation

It was evident from Table 6, the KMO (Kaiser-Meyer-Olkin) statistic yielded a value of 0.611 (> 0.5), signifying that the sample size was sufficient and suitable for performing factor analysis. Bartlett's test revealed an approximate chi-square statistic of 58.231 with 21 degrees of freedom, demonstrating significance at the 0.01 level. Consequently, it can be inferred that for the subsequent data analysis, factor analysis is an appropriate technique.

3.6.2 Principal component analysis

The principal component analysis (PCA) method provided the relationship between factors and variables within the analysis. Technically, it could be called factor loadings. These factor loadings indicated the relationship between variables clearly, but do not group all of them with the factors clearly. Table 7, shows that only three components had an Eigen value of more than one. These three components explained about 64.551 per cent of the variance.

3.6.3 Scree plot

Fig. 1 illustrates the scree plot, indicating that the plot becomes flat after the third component. Additionally, the Eigen value drops below one after the third component. The first three principal components possess eigenvalues exceeding one, signifying their significance in influencing the purchase of coconut milk. On the other hand, the remaining components hold limited importance as their eigenvalues are nearly negligible.

3.6.4 Rotated component matrix

Table 8 shows the factor loadings that arrived after the varimax rotation method. Factor loadings equal to or exceeding 0.50 value are regarded as significant. The initial component comprises 3-factor loadings surpassing the 0.5 thresholds, succeeded by the second component with 3-factor loadings, and the third component with 1-factor loadings. Appropriate names have been assigned to these components based on their underlying factors and details are given in Table 9.

3.6.5 Component and factors

It could be inferred from the table that the first component was named External perception factors which comprised three factors namely Brand reputation, availability, and packaging with a variance of 32.38 per cent, and the second component was named Value proposition factors which included two factors such as quality and convenient to use with a variance of 16.950 per cent. The third component was named product appeal factors which included one factor which is Taste with a variance of 15.223 percent. It was evident from the factor analysis that external perception factors with a variance of 32.378 per cent were the most influential factors for the purchase of coconut milk by consumers.

Table 6. KMO and Bartlett's Test Results

Kaiser- Meyer- Olkin Measure of sampling Adequacy		0.611
Bartlett's Test of Sphericity	Approx. Chi-Square	58.231
	df	21
	Sig	0.01

Table 7. Total Variance Explained

Component	Initial Eigen values			Extraction sums of squared loadings		
	Total	%Variance	Cumulative %	Total	% of variance	Cumulative %
1	2.266	32.378	32.378	2.266	32.378	32.378
2	1.187	16.950	49.328	1.187	16.950	49.328
3	1.066	15.223	64.551	1.066	15.223	64.551
4	0.886	12.660	77.210			
5	0.705	10.074	87.285			
6	0.481	6.866	94.150			
7	0.409	5.820	100.000			
Extraction method: Principal Component Analysis						

Table 8. Rotated Component Matrix

Factors	Components		
	1	2	3
Brand reputation	0.803		
Availability	0.769		
Packaging	0.691		
Quality		0.776	
Convenient to use		0.623	
Price		0.564	
Taste			0.918

Table 9. Component and Factors

Components	Variance%	Factors
External perception factors	32.378	Brand reputation Availability Packaging
Value proposition factors	16.950	Quality Convenient to use Price
Product appeal factors	15.223	Taste

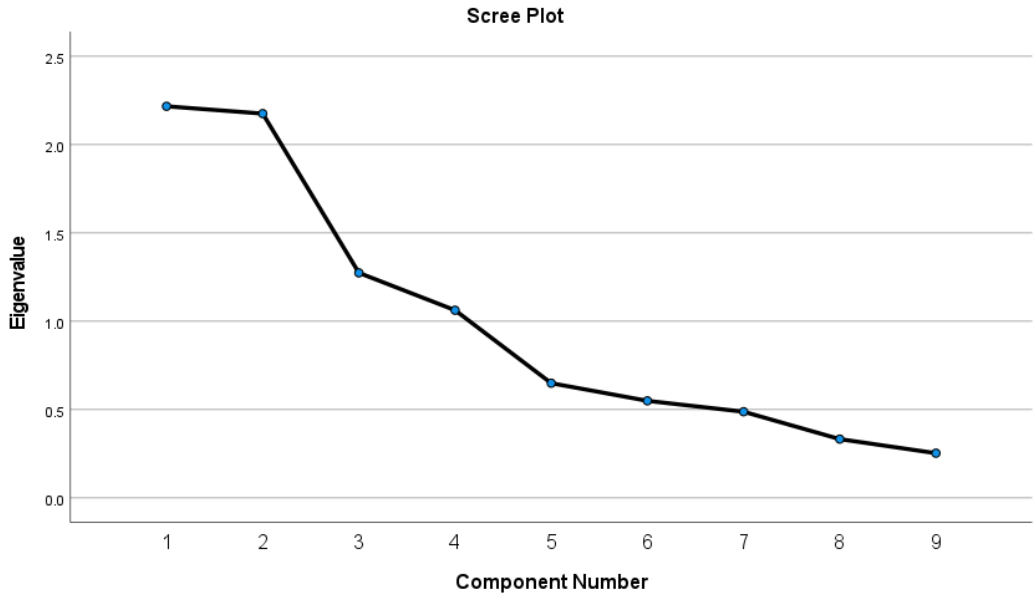

Fig. 1. Scree plot

4. CONCLUSION

The thorough analysis of consumer profiles and factors influencing consumer preferences for coconut milk offered valuable insights into the coconut milk industry. By understanding consumer demographics and preferences, businesses can tailor marketing strategies to resonate with specific segments. Additionally, uncovering the pivotal factors that swayed consumers towards purchasing coconut milk contributed to deeper comprehension. The collective understanding of consumer profiles and key influencing factors holds the potential to drive growth and foster a more consumer-centric and efficient Coconut Milk market.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Commission for Agricultural Costs and Prices: https://cacp.dacnet.nic.in/ViewReports.aspx?Input=2&PageId=37&KeyId=813
2. International Coconut Community Available: https://coconutcommunity.org/products-detail/coconut-milk
3. Belewu MA, Belewu KY. Comparative Physico- Evaluation of Tiger-nut, Soybean, and Coconut Milk Sources. Int. J. Agric. Biol. 2007;9: 785-787.
4. Schmitz A. Marketing Principles [online]; 2012. [2013-11-26]. Available at: http://2012books.lardbucket.org/books/marketing-principles-v2.0/s06-01-factors-that-influenceconsume.html
5. Sivathanu Brijesh. "Factors affecting consumer preference towards the organic food purchases. Indian Journal of Science and Technology. 2015;8 (33):1.
6. Murugan P, Paul TF. A Study on Consumer Buying Behavior towards Two-Wheeler in Tirunelveli District. International Journal of Engineering and Techniques. 2018;4(6):161-166.
7. Sharangi AB, Datta (eds.) S. Value Addition of Horticultural Crops: Recent Trends 125 and Future Directions. DOI 10.1007/978-81-322-2262-0_8, © Springer India 201
8. Henrietta HM, Kalaiyarasi K, Raj AS. Coconut Tree (Cocos nucifera) Products: A Review of Global Cultivation and its Benefits. Journal of Sustainability and Environmental Management. 2022;1(2): 257-264.
9. Muralidharan K, Jayashree A. Value addition, product diversification, and by-product utilization in coconut; 2011.
10. Sanful, Rita E. "Promotion of coconut in the production of yoghurt." African Journal of Food Science. 2009;3(5):147-149.
11. Amirah AS, Nor Syazwani S, Radhiah S, Anis Shobirin MH, Nor-Khaizura MAR, Wan Zunairah WI, Shazini NR. Influence of raisins puree on the physicochemical properties, resistant starch, probiotic viability, and sensory attributes of coconut milk yogurt. Food Research. 2020;4(1): 77-84.
12. Patil, Umesh, Soottawat Benjakul. Coconut milk and coconut oil: their manufacture associated with protein functionality. Journal of Food Science. 2018;83(8):2019-2027.
13. Tansakul, Ampawan, and Pawinee Chaisawang. "Thermophysical properties of coconut milk." Journal of Food Engineering. 2006;73(3):276-280.
14. Coconut Development Board. Available; https://coconutboard.gov.in/

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