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CONSUMER PREFERENCE AND BUYING BEHAVIOUR TOWARDS ORGANIC CEREAL PRODUCTS: A STUDY IN COIMBATORE CITY, SOUTH INDIA

Savitha Shree S[1], C Velavan[2], A Rohini[3], Ganesan Kanniappan[4], M Prahadeeswaran[5]

[1]PG Scholar, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, Coimbatore 641 003, India, savithasaravanan215@gmail.com, ORCID https://orcid.org/0009-0009-6176-4489
[2]Professor, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, Coimbatore 641 003, India, velavanc@tnau.ac.in, ORCID https://orcid.org/0000-0003-0623-7116
[3]Professor, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, Coimbatore 641 003, India, arohini@tnau.ac.in, ORCID https://orcid.org/0000-0002-3476-0003
[4]Associate Professor, Department of Rice, Tamil Nadu Agricultural University, Coimbatore 641 003, India, ganesan.k@tnau.ac.in, ORCID https://orcid.org/0000-0001-6028-0495
[5]Associate Professor, Department of Agricultural Economics, Tamil Nadu Agricultural University, Coimbatore 641 003, India, prahadeeswaranmeco@tnau.ac.in ORCID https://orcid.org/0000-0002-6175-3984

ABSTRACT

The increasing organic food products demand has highlighted the need to understand consumer preference and buying behaviour towards specific product categories such as organic cereal products. The present study aimed to analyze consumer preference and buying behaviour, identify the factors influencing consume preference, and determine the major constraints associated with the purchase of organic cereal products in Coimbatore City, South India. Primary data were collected from 120 consumers selected through purposive sampling from 12 recognized organic specialty stores using a structured interview schedule. Percentage analysis, Exploratory Factor Analysis (EFA) and Rank Based Quotient (RBQ) analysis were done using IBM SPSS statistics. The findings indicated that organic rice was accounted for 26.09%, which was the most favored organic cereal product, followed by organic cereal flour at 20.16% and organic millets at 19.37%. A majority of respondents, 56.67%, regularly purchased organic cereal products, with 47.37% preferring websites and 45.11% preferring supermarkets as their alternative purchase channels other than specialty organic stores. The most common purchase quantity was 1-2kg, reported by 36.76% of respondents, with a monthly expenditure ranging from ₹2,001 to ₹3,000 for 31.67% of them. EFA revealed six underlying factors which influencing the consumer preference: Health and Food safety, Environmental Sustainability, Product Quality and Sensory Attributes, Trust and Certification, information and Labelling, and Price and Availability. The six identified factors explained 69.13% of the total variance in consumer preference towards organic cereal products. High price is identified as the most severe constraint (RBQ = 93.90), indicating that affordability remains a major barrier to the purchase of organic cereal products despite growing consumer awareness. These findings offer valuable insights for producers, retailers, and policymakers in formulating effective strategies for pricing, marketing, certification, and distribution to enhance the consumption of organic cereal products in emerging urban markets.

KEYWORDS: Organic cereal products; Consumer preference; buying behaviour; Exploratory factor analysis; Organic food.

INTRODUCTION

Organic agriculture has gained considerable global attention as a sustainable food production system owing to increasing concerns about food safety, environmental sustainability, and human health. Organic food products are produced without the use of synthetic fertilizers, pesticides, genetically modified organisms (GMOs), antibiotics, or growth harmones. According to the Food and Agriculture Organization (FAO), organic agriculture improves soil health, ecosystems, and human well-being by relying on ecological processes, biodiversity, and natural cycles rather than synthetic inputs [1]. Similarly, the International Federation of Organic Agriculture Movements (IFOAM) describes organic agriculture as a production system guided by the principles of health, ecology, fairness, and care [2].

Organic food consumption has been associated with several health and environmental benefits. Regular consumption has been reported to reduce the risk of certain cancers by up to 25% compared with non-consumers [3]. Likewise, organic cereal products are associated with a lower risk of Type 2 diabetes, reduced heavy metal contamination, and improved environmental sustainability due t lower pesticide residues and environmentally friendly production practices. [4].

The global organic cereal market was valued at approximately USD 14.3 billion in 2024 and is projected to reach USD 33.0 billion by 2034, growing at a CAGR of 8.7% [5]. The Asia-Pacific region accounted for the largest market share in 2024, supported by rising consumer awareness, increasing disposable incomes and improved access to organic products through retail outlets. The continued growth of the market reflects the increasing preference for healthier and sustainably produced food products [5].

In India, organic cereals and food grains are the largest segment of the organic food market, accounting for 24% of the

total market in 2025 [6]. India is one of the leading countries in organic agriculture, supported by organic farming and certification programs [7]. Government initiatives such as Paramparagat Krishi Vikas Yojana (PKVY) and the National Program for Organic Production (NPOP) have helped promote organic farming, certification and market development [7][8]. North India accounted for the largest regional market share (34%) in 2025, while consumer awareness and demand for organic cereal products are also increasing in southern states, including Tamil Nadu, due to growing health awareness and better availability of organic products. [6].

Despite the rapid growth of the organic food sector, most previous studies have focused on organic food in general, with limited attention given to organic cereal products [14-16]. Furthermore, empirical evidence explaining consumer preference and buying behavior towards organic cereal products remains limited, particularly emerging urban markets [17-18]

Against this background, the present study aims to examine consumer preference and buying behaviour towards organic cereal products in an urban market of South India. Specifically, the study analyses consumers' buying behaviour, identifies the factors influencing consumer preference, and determines the major constraints affecting the purchase of organic cereal products. The findings are expected to assist producers, marketers, and policymakers in developing effective pricing, promotional, certification, and distribution strategies to enhance the adoption of organic cereal products in emerging urban markets.

LITERATURE REVIEW

The increasing global demand for organic food has encouraged researchers to examine the factors influencing consumer preferences and purchasing decisions. Existing studies have focused on several factors influencing organic food consumption, including product quality, health consciousness, environmental concern, trust, price and market accessibility. Based on the existing literature, the present review is organized around six key themes: consumer preference and attributes, health consciousness and food safety, environmental concern, trust and price fairness, product availability and digital influence and the research gap that provides the foundation for the present study.

2.1 Consumer Preference and Credence Attributes

Organic food is widely recognized as a credence good because its quality is not easily verified by consumers even after purchase or consumption. As a result, they depend on certification, product labels and brand credibility when making purchasing decisions [11-13]. Wang, Tao and Chu reported that certification plays an important role in assuring the product quality, while price influences consumers perception on quality and acts as a competitive factor in the organic food market [17]. Similarly, Labiad and Marso reported that greater transparency, supported by certification systems and digital technologies such as QR codes and blockchain, strengthens consumer trust by providing reliable product information and reducing lack of product information [18].

2.2 Health Consciousness and Food Safety

Health consciousness is widely recognized as one of the primary factors influencing consumers' decisions to purchase organic food. Michaelidou and Hassan reported that consumers who are more concerned about their health, food safety and ethical values are more likely to develop favorable attitudes and stronger purchase intentions towards organic products [9]. Similarly, Soni reported that perceived health benefits and superior product quality are the key drivers of organic food purchases, although high prices and limited consumer awareness continue to restrict regular buying behaviour [19]. Kamboj further observed that Indian consumers are willing to pay a premium for organic food when they believe its health benefits justify the additional cost [14].

More recently, Wang, Xue, and Liu distinguished between health motivation and herd behaviour in influencing organic food purchases. Their findings showed that while herd behaviour mainly encourages initial or short- term purchases, health consciousness serves as a stronger and more consistent driver of long-term purchasing decisions [20]. The application of models like the Health Belief Model and the Theory of Planned Behaviour further confirms that health motives directly strengthen consumers' purchase intentions [24]. This highlights the importance of market segmentation, as consumers who purchase organic food for health reasons are more likely to remain loyal over time. In contrast, those whose choices are influenced mainly by social trends or peer behaviour may stop purchasing once the initial interest declines.

Food safety is another important factor that strengthens consumers preference for organic food products. Nguyen et al. identified that health concerns, food safety and environmental awareness influenced positive consumers attitudes towards organic meat in a developing Asian market, although these favorable attitudes did not always result in actual purchases [22]. Likewise, Kalyani and Prabhavathi found that food safety was the strongest determinant of buying behaviour, while limited product availability remained a major challenge for consumers [36]. Rahman et al. further found that, despite mixed scientific evidence regarding the superior nutritional value of organic foods, consumers generally perceive them as safer because they are produced with lower levels of pesticide exposure [10].

Overall, the existing literature suggests that food safety and health consciousness are among the most important factors determinants of consumers preference for organic food. Their influence is particularly shown in the case of organic cereal products, which are often considered as healthier alternatives due to their nutritional value, lower pesticide residues and potential role in promoting long-term well-being. As cereals are consumed regularly in most households, consumers often give greater importance on their safety and quality. Consequently, even small improvements in the perceived nutritional benefits or safety of organic cereals can encourage repeat purchases and strengthen consumer preference over time.

2.3 Environmental Concern and Sustainable Consumption

Environmental sustainability has become an important factor influencing consumers preference for organic food, along with health-related concerns. Cachero-Martinez reported that consumers with stronger environmental concerns are more likely to have positive attitudes towards organic products, leading to higher satisfaction and stronger purchase and recommendation intentions [24]. Similarly, Iqbal et al. found that environmental awareness encourages consumers to learn more about organic products, which in turn increases their intention to purchase them. Their study also showed that environmental concern, together with health consciousness and food safety, plays an important role in influencing consumers purchasing behaviour towards organic food [25].

These findings suggest that environmental concern, together with health-related factors, influences consumers purchasing decisions. Growing awareness of climate change, soil degradation, and the harmful effects of pesticide use has encouraged consumers to choose food products that re better for both their health and the environment. As a result, environmental responsibility has become an important factor in consumer choice rather than a secondary consideration. It also increases consumers trust in organic certification, product traceability, and the overall value of organic cereal products, which positively influences their purchase decisions

2.4 Price fairness, Trust and Certifications

Trust plays an important role in the organic food market because consumers cannot directly confirm the authenticity and quality of organic products. Madduri and Niveditha reported that certification, clear branding and effective product traceability improve consumer trust, leading to greater satisfaction and greater willingness to make repeat purchases [26]. Even though awareness and favorable attitudes towards organic food have increased, its high price continues to reduce regular purchases. Rodiger and Hamm observed that premium pricing often prevents consumers from purchasing organic products, even when they understand their benefits [27]. Similarly, Aschemann-Witzel and Zielke found that consumers are more likely to make repeat purchases when they consider prices to be fair, whereas higher prices reduce customer loyalty [29].

Marozzo et al. further reported that consumers are willing to pay more for products they consider as authentic, sustainable and of better value [30].

Overall, these findings show that while trust encourages intention to purchase, fair pricing determines whether purchase intentions are converted into actual buying behaviour.

2.5 Product Availability, Digital Influence and Consumer Experience

The availability of organic products plays a important role in converting consumers purchase intentions into actual buying behaviour. Limited market access and inadequate retail distribution may reduce purchases, even among consumers with positive attitudes towards organic food. Previous studies suggest that improving product availability can increase consumer adoption of organic products, highlighting the need to improve the distribution of organic cereal products [31,32].

In addition to physical accessibility, digital platforms have become increasingly important in influencing consumer behaviour. Nguyen and Nguyen found that trusted social media influencers positively affect purchase intentions by increasing trust and emotional connection [22]. Similarly, Danner and Thogersen reported that online interactions contribute to positive consumer attitudes towards organic food [33]. Cahyasita, Irham, and Jamhari further observed that product attributes such as freshness, taste, texture and appearance encourage customer satisfaction and repeat purchases [34]. Overall, product availability, digital engagement and positive product experiences collectively strengthen consumer preference and promote long-term loyalty.

Research Gap

Previous studies have identified health consciousness, food safety, environmental concern, trust in certification, price fairness, product availability, and digital communication as the main factors influencing consumers organic food purchasing behaviour. However, most research has analysed organic food as a broad category with comparatively limited attention given to organic cereal products. Unlike fresh fruits, vegetables or dairy products, cereals have distinct processing, storage and consumption characteristics that can shape consumer preference differently. Furthermore, empirical evidence from tier-II Indian cities remains limited, despite rapid changes in retail infrastructure, increasing consumer awareness and evolving purchasing patterns [38,39]. Consequently, there is only a limited understanding of factors influencing consumer preference and purchase behaviour towards organic cereal products in these markets. To address this gap, the present study examines consumer preference, identifies the factors influencing purchase decisions, and investigates the barriers associated with the purchase of organic cereal products in Coimbatore city.

The Purpose and Objectives of the Study

The present research was undertaken to:

1. Analyse the buying behaviour of consumers toward organic cereal products.
2. Identify the key factors that influence consumer's decisions to purchase organic cereal products.
3. Analyse the constraints faced by consumers in the purchase of organic cereal products.

MATERIALS AND METHODS

Study area and research design

The present study was conducted in Coimbatore City, Tamil Nadu, one of the rapidly developing urban centers in South

India. The city has experienced increasing consumer awareness regarding healthy food choices, accompanied by the expansion of specialized organic retail stores offering a wide range of organic food products.
The availability of specialty organic outlets and the growing demand for organic cereals make Coimbatore an appropriate location for examining consumer preference and buying behaviour towards organic cereal products.

Sampling procedure
A purposive sampling approach was adopted to select respondents for the study. There are 12 recognized specialty organic retail stores located in different parts of Coimbatore City were identified based on their regular sale of organic food products. Consumers visiting these outlets who had experience purchasing organic cereal products were approached for the survey. A total of 120 respondents were selected, with 10 respondents interviewed from each retail outlet, ensuring representation from all selected stores.
The selected retail outlets included Uyir Organic Farmers Market (Nava India and Saibaba Colony), OTR Organic Farm Products (Saibaba Colony and Vadavalli), Sreevatsa Organics (Murugan Mills and G.N. Mills), The Organic World, Ueir Organic Store, Seeragam – The Native Store, Veyr Organics, and Orga Organics.

Data Collection
The study was based on primary data collection which is directly collected from consumers through a structured interview schedule. The well-structured interview schedule comprised questions on respondents' socio-demographic characteristics, preferred organic cereal products, purchase frequency, quantity purchased, monthly expenditure, place of purchase, sources of information, factors influencing consume preference, and constraints experienced while purchasing organic cereal products.
Consumer opinions on the influencing factors were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Tools of analysis
The collected data were analyzed using IBM SPSS Statistics Version 27. Percentage analysis, Exploratory Factor Analysis (EFA), and Rank Based Quotient (RBQ) analysis were done to achieve the objectives of the study.

Percentage analysis
Percentage analysis was used to summarize the demographic characteristics of the respondents and their buying behaviour, including products preference, purchase frequency, purchase quantity, expenditure pattern, and sources of information.
Percentage = (Number of respondents / Total respondents) ×100 Exploratory Factor Analysis

(EFA)
Exploratory Factor Analysis was performed to identify the underlying dimensions influencing
consumer preference towards organic cereal products, Principal Component Analysis with Varimax rotation was used to extract the factors. The adequacy of the sample was evaluated using Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity. Factors with eigenvalues greater than one were retained, while variables with factor loadings of 0.50 or above were considered significant for interpretation. The internal consistency of the scale items was assessed using Cronbach's alpha coefficient [35].

Rank Based Quotient (RBQ)
The Rank Based Quotient technique was used to determine the relative importance of the constraints faced by consumers while purchasing organic cereal products. Respondents ranked each constraint according to its severity, and the rankings were converted into RBQ values using the following formula [37]:

were,

$$\mathbf{RBQ\ (\%) = [\Sigma\ f_i\ (n + 1 - i)] / (N \times n) \times 100}$$

f_i = the number of respondents assigning the i^{th} rank to a given constraint, n = the total number of constraints ranked and
N = the total number of respondents.
The constraints were arranged according to their RBQ values, with higher scores indicating greater importance.

RESULTS AND DISCUSSION
Demographic characteristics of the respondents
Table 1 presents the demographic characteristics of the respondents. Among the 120 respondents, 52.50% were female and 47.50% were male, indicating a nearly balanced gender distribution with a slight predominance of female respondents. The largest proportion of respondents (34.17%) belonged to the 46-55 years age group, followed by those aged 56-65 years (29.17%), indicating that middle-aged and older adults constituted the majority of the respondents possessed a postgraduate degree or above, while 31.67% were graduated, indicating that most respondents were highly educated. Employees constituted the largest occupational group (60.00%), followed by business owners (23.33%) and homemakers (16.67%).

Nearly half of the respondents (49.17%) belonged to three-member families. Regarding monthly family income, 34.17% of respondents earned between ₹30,000 and ₹50,000, followed by 28.33% earning between ₹50,001 and ₹1,00,000, indicating that the majority of respondents belonged to middle-income households.

Table 1. Demographic details of respondents.

Variable	Category	Frequency (n=120)	Percentage (%)
Gender	Male	57	47.50
	Female	63	52.50
Age in years	26-35	17	14.17
	36-45	27	22.50
	46-55	41	34.17
	56-65	35	29.17
Education	Primary education	17	14.17
	Secondary education	22	18.33
	Graduate	38	31.67
	Postgraduate & above	43	35.83
Occupation	Employee	72	60.00
	Business	28	23.33
	Homemaker	20	16.67
Family size	2	13	10.83
	3	59	49.17
	4	31	25.83
	5	17	14.17
Monthly family income (₹)	30,000-50,000	41	34.17
	50,001-1,00,000	34	28.33
	1,00,001-1,50,000	25	20.83
	1,50,001-2,00,000	20	16.67

Table 2 presents the respondents' preference for different types of organic cereal products. Among the various cereal types, organic rice was the most preferred (26.09%), followed by organic cereal flours (20.16%) and organic millets (19.37%). The higher preference for organic rice and millets reflects their importance as staple foods in South Indian dietary patterns. Organic oats (12.65%) and ready-to-eat (RTE) products (11.86%) showed moderate levels of preference, whereas organic maize recorded the lowest preference (1 58%) among the respondents.

Table 2. Consumer preference for organic cereal types

S. No.	Particulars	n	%
1	Organic Rice	66	26.09
2	Organic Millets	49	19.37
3	Organic Cereal Flours	51	20.16
4	Organic Oats	32	12.65
5	Organic RTE	30	11.86
6	Organic Wheat	21	8.30
7	Organic Maize	4	1.58
	Total	253	
	(Multiple response allowed)		

Table 3 presents the purchasing pattern of respondents with respect to organic cereal products. Among the respondents, 56.67% reported purchasing organic cereal products regularly, while 43.33% purchased them occasionally. The higher proportion of regular buyers indicated that organic cereal products have become a part of the routine purchasing behaviour of a majority of the respondents.

Table 3. Buying behaviour of respondents

S. No.	Particulars	n	%
1	Regular	68	56.67
2	Occasional	52	43.33
	Total	120	

Table 4 presents the respondents preferred purchase locations for organic cereal products. Among the available purchase channels, website was the most preferred (47.37%), followed closely by supermarkets (45.11%), while mobile applications accounted for the lowest preference (7.52%). The nearly equal preference for websites and supermarkets indicated that respondents utilise both online and offline retail channels for purchasing organic cereal products. In contrast, mobile applications were comparatively less preferred than the other purchase channels. Since multiple responses were permitted, the total number of responses exceeded the sample size (n=120).

Table 4. Alternative purchase locations for organic cereals

S. No.	Particulars	n	%
1	Websites	63	47.37
2	Supermarkets	60	45.11
3	Mobile apps	10	7.52
	Total	133	
	(Multiple response allowed)		

Table 5 presents the respondents' preferred day for purchasing organic cereal products. Among the respondents, 44.17% preferred to purchase organic cereal products during weekends, followed by 35.00% who purchased on both weekdays and weekends. Only 20.83% preferred to purchase during weekdays. The higher preference for weekend purchases may be associated with the predominance of employed respondents (60.00%) in the study, who are likely to have greater opportunity to shop during weekends.

Table 5. Preferred day of purchase

S. No.	Particulars	n	%
1	Weekends	53	44.17
2	Both	42	35.00
3	Weekdays	25	20.83
	Total	120	

Table 6 presents the purchase frequency of organic cereal products among the respondents. Half of the respondents (50.83%) reported purchasing organic cereal products on a monthly basis. Equal proportions of respondents (18.33% each) purchased them twice a weekly or only rarely, whereas 12.50% reported purchasing them weekly. The predominance of monthly purchases suggests that respondents generally purchase organic cereal products in bulk to meet their household requirements rather than making frequent purchases.

Table 6. Frequency of purchase

S. No.	Particulars	n	%
1	Monthly	61	50.83
2	Twice a week	22	18.33
3	Rarely	22	18.33
4	Weekly	15	12.50
	Total	120	

Table 7 presents the sources of information influencing respondents' awareness of organic cereal products. Influencers (26.57%) were the most important source of information, closely followed by social media (25.17%). Nutritionists and

doctors accounted for 20.98 %, while family and friends contributed 16.08%. Product trails (6.99%), personal interest (3.50%), and television and radio (0.70%) were comparatively less important sources of information, The findings indicate that digital media and interpersonal communication play an important role in creating awareness of organic cereal products among consumers. Since multiple responses were permitted, the total number of responses exceeded the sample size (n=120).

Table 7. Distribution of respondents by source of information

S. No.	Particulars	n	%
1	Influencer	38	26.57
2	Social media	36	25.17
3	Nutritionist/Doctor	30	20.98
4	Family and friends	23	16.08
5	Product trials	10	6.99
6	On personal interest	5	3.50
7	TV & Radio	1	0.70
	Total	143	

Table 8 presents the duration of organic cereal product consumption among the respondents. The largest proportion of respondents (30.00%) had been consuming organic products for 4-6 years, followed by 28.33% for 1-3 years. Respondents consuming organic cereal products for less than one year accounted for 24.17%, while 17.50% had been consuming them for more than six years. The distribution across the different duration categories indicates that organic cereal products have been adopted by both relatively new and long-terms consumers, reflecting a well- establishes consumer base.

Table 8. Distribution of respondents by duration of consumption

S. No.	Particulars	n	%
1	Less than 1 year	29	24.17
2	1-3 years	34	28.33
3	4-6 years	36	30.00
4	More than 6 years	21	17.50
	Total	120	

Table 9 presents the quantity of organic cereal products purchased by the respondents. The graph shows the percentage of distribution of respondents by quantity of purchase. The highest proportion of purchases was in the 1-2 kg category (36.76%), followed by 2-3 kg (26.09%), 1 kg (24.51%) and 3-4 kg (12.65%). Organic rice accounted for the largest share of purchases (26.09%), followed by organic cereal flour (20.16%) and organic millets (19.37%). Organic oats and ready-to-eat (RTE) products were purchased in comparatively smaller quantities, while organic maize accounted for the lowest proportion of purchases (1.58%). Overall, the findings indicate that respondents generally preferred purchasing organic cereal products in moderate quantities suitable for regular household consumption rather than in bulk quantities.

Table 9. Distribution of respondents by quantity of purchase.

S.No.	Product	1 kg (n)	1-2 kg (n)	2-3 kg (n)	3-4 kg (n)	Total
1	Organic Rice	14	24	18	10	66
2	Organic Millets	10	20	13	6	49
3	Organic Wheat	5	8	5	3	21
4	Organic Oats	8	12	8	4	32
5	Organic Maize	2	1	1	0	4
6	Organic Cereal Flour	11	18	15	7	51
7	Organic Ready-to-Eat (RTE)	12	10	6	2	30
	Total	62	93	66	32	253

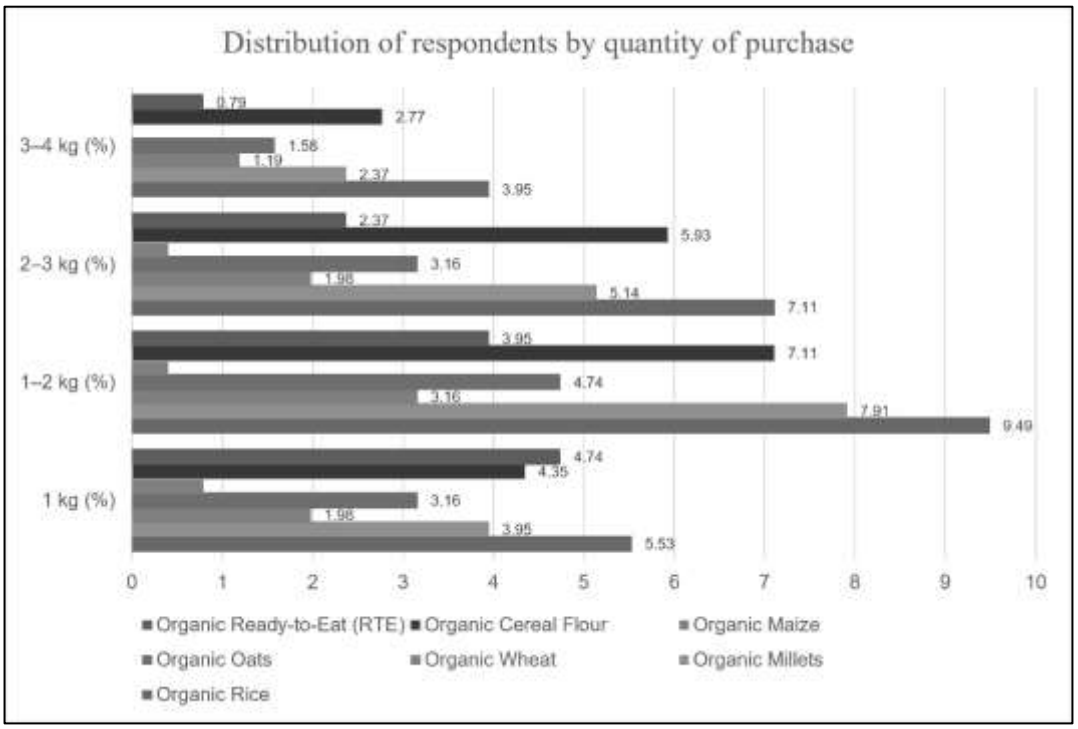


Table 10 presents the monthly expenditure of respondents on purchasing organic cereal products. The largest proportion of respondents (31.67%) spent between ₹2,001 and ₹3,000 per month, followed closely by 30.00% spending between ₹3,001 and ₹4,000. Respondents spending between ₹4,001 and ₹5,000 accounted for 25.00%, while only 13.33% spent between ₹1,000 and

₹2,000 per month. Overall, 61.67% of the respondents spent between ₹2,001 and ₹4,000 per month, indicating that this expenditure range was the most common among the respondents.

Table 10. Distribution of respondents by amount spent on purchasing

S. No.	Particulars (₹)	n	%
1	2,001-3,000	38	31.67
2	3,001-4,000	36	30.00
3	4,001-5,000	30	25.00
4	1,000-2,000	16	13.33
	Total	120	

Key influencing factors in consumer buying behaviour Factor Analysis

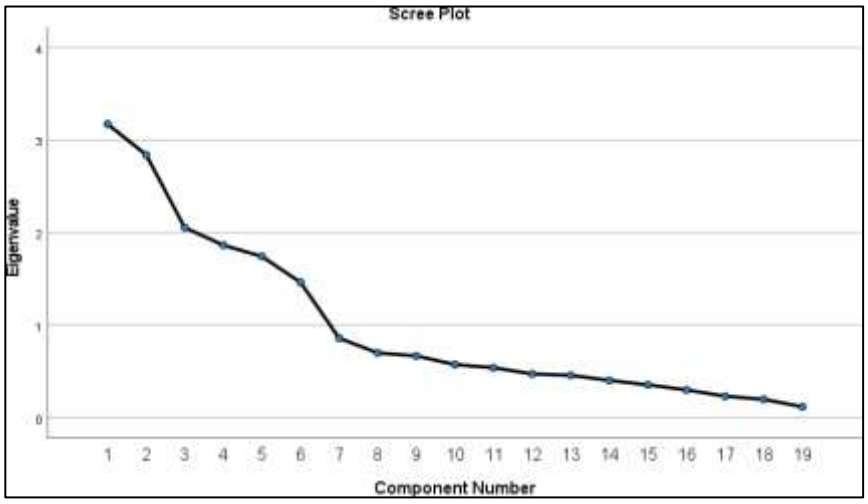
To determine the factor influencing the consumer preference towards cereal based organic food products, Exploratory Factor Analysis (EFA) was performed using Principal Component Analysis (PCA) with Varimax rotation. Factor analysis is the multivariate statistical analysis used to reduce the large number of variables into smaller group based on their nature. The suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The KMO value of 0.649 shows that the sample was adequate for factor analysis. Bartlett's Test of sphericity produced a chi-square value of 843.282 with 171 degrees of freedom, which was statistically significant ($p < 0.001$), confirms that the correlation matrix was suitable for factor extraction.

Table 11. KMO and Bartlett's test

Particulars	Values
Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy	0.649
Bartlett's test of sphericity - Approx. Chi-square	843.282
Degrees of freedom	171
Significance (p-value)	0.000

The number of factors retained was determines using the kaiser criterion (eigenvalues > 1) and confirmed through visual

examination of the scree plot. The scree plot shows that a clear point of inflection after the sixth component, supporting the retention of six factors for further analysis.



The eigenvalues and the percentage of variance explained by each factor are presented in Table 12. The six extracted factors together explained 69.13% of the total variance, indicating a satisfactory representation of the underlying dimensions influencing consumers' preference towards organic cereal food products. The first factor explained 13.46% of the variance followed by the second (12.72%), third (11.27%), fourth (10.93%), fifth (10.93%) and sixth (9.83%). To improve the interpretability of the factor structure, Varimax rotation was applied, which maximized the variance of factor loadings across the extracted components.

Table 12. Total variance explained by principal component analysis

Component	Initial eigenvalue	% of variance	Cumulative %
1	3.173	16.700	16.700
2	2.841	14.951	31.651
3	2.083	10.808	42.459
4	1.864	9.812	52.270
5	1.782	9.186	61.436
6	1.482	7.698	69.132

Factor loadings of 0.50 and above were considered significant for assigning variables to the respective factors, in accordance with standard recommendations in multivariate analysis. The rotated component matrix is presented in Table 13, shows a clear and interpretable clustering of variables across the six retained factors.

Table 13. Rotated component matrix showing factors influencing consumer preference towards organic cereal-based foods

Variables	F I	F II	F III	F IV	F V	F VI
Consuming organic cereal products helps maintain good health	0.811					
Consuming organic cereal products gives a sense of well-being	0.793					
Age influences purchase decision	0.783					
organic cereal products help stay physically fit	0.742					
Product label information influences purchase decision		0.907				
Nutritional information influences purchase decision		0.896				

Organic certification influences purchase decision		0.796				
Friends and peers influence purchase decision			0.908			
Previous experience influences purchase decision			0.838			
Opinions of people around influence purchase decision			0.749			
Organic cereal products taste better				0.810		
Organic cereal products are fresher				0.794		
Organic cereal products have better texture				0.751		
Organic farming improves soil health					0.833	
Organic farming reduces carbon emissions					0.809	
Purchasing organic cereal products supports sustainability					0.703	
Organic cereal products are safer than conventional ones						0.870
Free from artificial food additives						0.795
Free from harmful chemical residues						0.611

Based on the nature of variables with high factor loadings, the extracted factors were named and summarized in Table 14. The first factor, Health Motivation, highlights the role of perceived health, well-being and physical fitness.

The second factor, Information & Certification Attributes, shows the importance of label information, nutritional disclosure and organic certification in guiding consumer choice. The third factor, Social Influence, captures the role of prior experience, peer recommendation and social opinion in purchase decisions. The fourth factor, Sensory Attributes, indicates the importance of taste, freshness and texture in product preference. The fifth factor, Environmental Concern, emphasizes sustainability, soil health and carbon-emission reduction associated with organic farming. The sixth factor, Food Safety, highlights the role of safety, absence of artificial additives and absence of harmful chemical residues in consumer preference.

Table 14. Identified factors and variance explained

Factor	**Factor name**	**Variance explained (%)**
I	Health Motivation	13.46
II	Information & Certification Attributes	12.72
III	Social Influence	11.27
IV	Sensory Attributes	10.93
V	Environmental Concern	10.93
VI	Food Safety	9.83
	Total	69.13

Overall, the factor analysis shows that consumer preference towards organic cereal-based foods is multidimensional in nature. While health motivation plays a significant role in shaping preference, factors such as information and certification, social influence, sensory quality, environmental concern and food safety significantly contribute to purchase decisions. These findings are consistent with earlier studies on organic and functional foods, which suggest that both intrinsic product attributes and extrinsic informational and social cues jointly shape consumer choice behaviour.

Constraints faced by consumers

The constraints faced by consumers in purchasing cereal-based organic food products were ranked using the Rank Based Quotient (RBQ) technique.

Table 17. Constraints ranked using Rank Based Quotient

S. No.	Constraints	RBQ Score	Rank
1	High Price	93.90	I
2	Irregular Availability	87.21	II
3	Limited Variety	72.53	III
4	Lack of Trust	58.28	IV
5	Short Shelf Life	57.41	V
6	Doubt on Certification	36.34	VI
7	Low Awareness	27.62	VII
8	Family Preference	16.72	VIII

High price is the most severe constraints (RBQ = 93.90), shows that despite of strong health consciousness, affordability remains a significant barrier to regular organic cereal consumption. Irregular Availability ranked second (RBQ = 87.21), shows that supply chain gaps are plays important role in stocking of organic cereals at retail outlets. Limited Variety secure third rank (RBQ = 72.53), indicate that the variety range of organic cereal products available to consumers not fulfilling their expectations.

Lack of Trust (RBQ = 58.28) and Doubt on Certification (RBQ = 36.34) together indicates that despite of certification trust emerged as a strong positive factor in the factor analysis, the segment of consumer remains lack of trust among certifications. Short Shelf Life (RBQ = 57.41) ranked fifth reflects the preservation and packaging challenges typical of chemical free cereal products. Low Awareness (RBQ = 27.62) and Family Preference (RBQ = 16.72) ranked lowest among the constraints, shows that awareness is no longer the primary bottleneck for this consumer base rather than the practical constraints like price, availability and trust are the important barriers for the consumers for purchasing organic cereal products.

CONCLUSION

This study examined consumer preference and buying behaviour towards organic cereal products in Coimbatore City, South India. The results showed that organic rice, organic cereal flour, and organic millets were the most preferred products, reflecting consumers strong preference for staple cereal products. Most respondents purchased organic cereal products regularly, preferred websites and supermarkets as their main purchase channels, and generally bought moderate quantities to meet regular household requirements.

Exploratory Factor Analysis identified six underlying dimensions influencing consumer preference: Health and Food Safety, Environmental Sustainability, Product Quality and Sensory Attributes, Trust and Certification, Information and Labelling, and Price and Availability. These findings indicate that consumers' purchasing decisions are influenced by combination of health, environmental, product, and market-related factors. In addition, the Rank Based Quotient analysis showed that high prices, limited product availability, and lack of consumer awareness were the major constraints affecting the purchase of organic cereal products.

The findings suggest the need to improve product availability, strengthen certification and labelling systems, implement competitive pricing strategies, and increase consumer awareness through effective promotional and digital communication activities. The study provides practical implications for producers, retailers, marketers, and policymakers in designing strategies to promote the consumption and market expansion of organic cereal products, particularly in emerging urban markets. Further research involving larger samples and different geographical regions would provide broader insights into consumer behaviour and facilitate comparative analyses across diverse markets.

Authorship Contribution Statement

Savitha Shree S : Conceptualization, methodology, data collection, analysis, interpretation, manuscript preparation.
C Velavan : Conceptual development, supervision, project administration, critical revision.
A Rohini : Validation, supervision, manuscript review. Ganesan
Kanniappan : Validation, manuscript review.
M Prahadeeswaran : Statistical analysis, data interpretation, manuscript review.

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Conflict of Interest
The authors declare no conflict of interest.

Data Availability Statement
The data that support the findings of this study are available from the corresponding author upon reasonable request.

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