Extension Journal

International Journal of Agriculture Extension and Social Development

Exploring the determinants of consumer behaviour in food and beverages purchases in Raipur City, Chhattisgarh

¹Kajal, ²Hulas Pathak and ³Dr. Sanjay Kumar Joshi

¹Ph.D. Scholar, Department of Agri-Business and Rural Management, Indira Gandhi Krishi Vishwavidyala, Raipur, Chhattisgarh, India

²Professor & Head, Department of Agri-Business and Rural Management, Indira Gandhi Krishi Vishwavidyala, Raipur, Chhattisgarh, India

³Assistant Professor, Department of Agri-Business and Rural Management, Indira Gandhi Krishi Vishwavidyala, Raipur, Chhattisgarh, India

Corresponding Author: Kajal

Abstract
The goal of the study is to better understand the factors influencing consumer buying behaviour of food and beverages in Raipur City. The research aims to identify the key determinants affecting purchasing decisions, including cultural, social, personal, and psychological aspects. A survey of urban consumers in Raipur City was conducted to collect primary data, which was analysed using statistical tools to determine significant influencing factors. The findings of this study show that the KMO Test and Bartlett's Test of Sphericity confirmed the adequacy of the data for factor analysis. The KMO value was found to be 0.806, indicating good sampling adequacy. Three major factors were extracted, collectively explaining 57.384% of the total variance in the dataset. Factor 1 explains 29.432% of the variance before rotation and 22.757% after rotation; Factor 2 accounts for 19.591% before and 18.686% after rotation; Factor 3 contributes 8.361% before and 15.941% after rotation. These factors provide deep insights into consumer perceptions, brand preferences, and purchase motivations, enabling food and beverage businesses to design effective marketing strategies. The study emphasizes that understanding consumer attitudes and satisfaction levels is essential for developing competitive advantage, improving product quality, and fostering long-term brand loyalty in the growing urban market of Raipur City.

Keywords: Consumer buying behaviour, factor influencing, social, cultural, personal factors, psychological factors, brand preferences, product quality and consumer satisfaction

Introduction
The city of Raipur is experiencing a significant transformation in its food and beverages market, drive by changing consumer preferences and lifestyles. As the capital of Chhattisgarh, Raipur's consumers are increasingly seeking diverse culinary experience, influencing the growth of the food and beverages markets. This study aims to explore the determinants of consumer behaviour in food and beverages purchase, identify the key factors that shape consumer preferences and purchasing decision. Raipur's urban consumers are increasingly becoming brand-conscious and health-oriented, which influences their purchasing decisions. Factors such as quality, price, taste, ingredients, packaging, and nutritional information now play a more significant role than ever before. The growth of supermarkets, malls, and online food delivery services, the food and beverage market has become more competitive and consumer-driven (www.wikipedia.com).This study aims to explore the key determinants that influence consumer behaviour in food and beverage purchases in Raipur City. Consumer behaviour in food and beverage purchases is shaped by a complex interaction of cultural, social, personal, psychological, and marketing-related factors. Cultural influences determine traditional food preferences and dietary norms (Hofstede, 2001; Kaur & Singh, 2017) [7, 8], while social factors such as family, peers, and social media strongly affect purchasing patterns (Bearden & Etzel, 1982; Sharma & Verma, 2020) [2, 19]. Personal characteristics like age, income, education, and lifestyle influence brand choice and health awareness (Kumar & Bansal, 2018; Saxena & Mishra, 2019) [10, 18], and psychological factors including motivation, perception, and attitudes guide decisions through beliefs and value perceptions (Maslow, 1943; Fishbein & Ajzen, 1975; Steptoe et al., 1995) [12, 4, 1, 20]. Marketing elements such as branding, packaging, pricing, and labeling also play a decisive role by shaping consumer perceptions and trust (Wansink, 2004; Clement, 2007; Gupta & Verma, 2019; Zeithaml, 1988) [21, 3, 6, 22]. In addition, growing health and environmental consciousness has led to increased demand for organic and sustainable products (Magnusson et al., 2003; Rana & Paul, 2020) [11, 15]. Theoretical frameworks like the Theory of Planned Behaviour (Ajzen, 1991) [1] and Engel-Kollat-Blackwell Model (1978) highlight that food and beverage purchasing

behaviour results from the combined influence of individual attitudes, socio-cultural context, and marketing stimuli, reflecting evolving consumption patterns in modern urban societies. It was especially impactful across different income and education levels (Shah *et al*. 2013) [17], the economic pricing appeal to rural and semi-urban populations, while urban consumers value hygiene, affordability, and convenience, which drive their biscuit purchases (Ganesh *et al.,* 2013) [5].

Methodology
Selection procedure
The data for the study were collected from primary source. A purposively sapling procedure was followed for selecting the urban consumers. The study was conducted in Chhattisgarh state, from this state in Raipur City as purposively selected. There are 300 urban consumer was selected in different retail outlets (Super market/Hyper market/Departmental stores etc.) of food and beverages products was complete the objective of the study.

Methods of Data collection
To meet the objective of the study, primary data was collected through a predesigned structured questionnaire. The study used a survey design to collect the data from a sample of 300 urban consumers. The gathered data were combined and analysed in factor analysis with correlation matrix, KMO and Bartlett's Test and principle components analysis (PCA) to get a relevant result.

Results and Discussion
A factor analysis was conducted on the factors influencing the purchase of packaged food products. The scale consisted of 14 items, which were factor analysed to identify underlying dimensions. The following steps discuss the results of the factor analysis that was performed.

Table 4.1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.806
Bartlett's Test of Sphericity	Ap. Chi-Square	1973.36
	Df	91
	Sig.	**

Source: Computed -** significant at 1 per cent level **

Table 4.1 presents the results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity, which are conducted to evaluate the appropriateness of the data for factor analysis. (To determine the appropriateness of the data for factor analysis, the KMO test and Bartlett's Test of Sphericity were performed. The KMO value was found to be 0.806, which exceeds the minimum recommended threshold of 0.6, indicating that the sample is adequate and the variables share enough common variance for factor analysis. Moreover, Bartlett's Test of Sphericity produced a Chi-square statistic of 1973.36 with 91 degrees of freedom and a significance value of $p < 0.01$. This result confirms that the correlation matrix significantly differs from an identity matrix, meaning that the variables are sufficiently correlated to justify proceeding with factor analysis. Principal Component Analysis (PCA) was applied as a data reduction technique to identify key underlying dimensions

among the variables. PCA works by converting a group of interrelated variables into a new set of independent (uncorrelated) factors, ensuring that each factor represents a unique portion of the overall variance in the dataset. Since the analysis included 14 variables, and each variable contributes a variance of 1, the total variance available for extraction was 14 variables. The distribution of variance across the extracted factors is presented in the table 4.2

Table 4.2: Total Variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loading (Rotated)		
S. No.	Total	% of variance	Cumulative%	Total	% of variance	Cumulative%
1	4.12	29.432	29.432	3.186	22.757	22.757
2	2.743	19.591	49.023	2.616	18.686	41.443
3	1.171	8.361	57.384	2.232	15.941	57.384
4	0.934	6.673	64.057			
5	0.857	6.124	70.181			
6	0.663	4.739	74.92			
7	0.64	4.571	79.491			
8	0.578	4.127	83.618			
9	0.527	3.763	87.381			
10	0.46	3.285	90.666			
11	0.414	2.958	93.624			
12	0.355	2.537	96.161			
13	0.292	2.087	98.248			
14	0.245	1.752	100			
Source:	Computed					

The table presents the results of Principal Component Analysis (PCA) conducted on 14 variables. Based on the criterion of eigenvalues greater than 1, three factors were extracted. These three factors collectively explain 57.384% of the total variance in the dataset:
- Factor 1 explains 29.432% of the variance before rotation and 22.757% after rotation.
- Factor 2 accounts for 19.591% before and 18.686% after rotation.
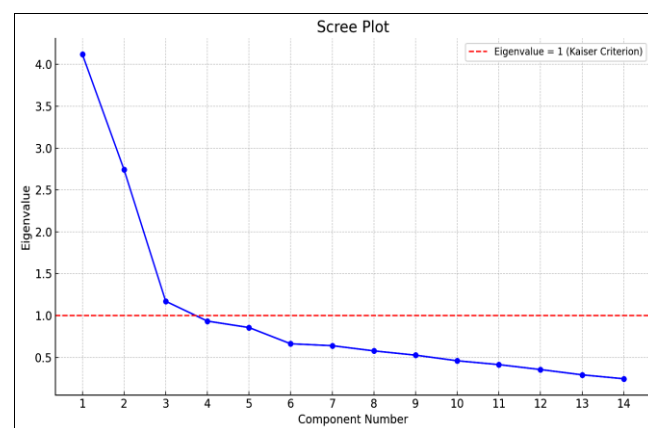- Factor 3 contributes 8.361% before and 15.941% after rotation.

Fig 1: Scree Plot of Egen value

After rotation, the variance is more evenly distributed across the three factors, enhancing interpretability. The remaining components have eigenvalues less than 1 and were therefore not retained. The Table 4.3 given below is the Component

Matrix or Factor Matrix where PCA extracted 3 factors. These are all coefficients used to express a standardized variable in terms of the factors. For example, Factor 1 is the factor with largest loading (0.683) for the item, namely "List of ingredients". These are all the correlations between the factors and the variables, that is the correlation between this statement and Factor 1 is 0.683. Thus the factor matrix is obtained. These are the initially obtained estimates of factors.

Table 4.3: Component Matrix

S. No.	Component	1	2	3
1	List of ingredient	0.683	0.268	.-043
2	Nutrition information	0.647	-0.195	-0.327
3	Brand	0.639	-0.093	0.119
4	Country of origin	0.629	-0.569	0.114
5	Net content	0.62	0.293	0.279
6	Instruction of use	0.601	0.249	-0.261
7	Symbol of Standard	0.6	-0.287	0.332
8	Name of manufacturer	0.564	-0.56	0.23
9	Batch/Lot identification	0.552	-0.617	0.092
10	Packed date	0.402	0.614	0.401
11	Expiry date	0.35	0.597	0.418
12	Storage condition	0.447	0.582	0.027
13	Price	0.193	0.545	0.046
14	Vegetarian or non-vegetarian symbol	0.423	0.0887	-0.616

Source: Computed (Extraction Method: Principal Component Analysis. 3 components extracted)

In this study, the rotation revealed three distinct factors, each associated with a specific set of variables. Variables with high factor loadings under a particular component indicate strong relationships and are used to define the theme or nature of each factor. The variables were arranged in decreasing order of loadings within each factor column to facilitate clearer interpretation.

Table 4.4: Rotated Component Matrixes

S. No.	Component	1	2	3
1	Country of origin	0.829	-0.118	0.177
2	Name of the ingredient	0.822	-0.083	0.048
3	Batch/lot identification	0.797	-0.199	0.14
4	Symbol of standard	0.718	0.191	0.038
5	Brand	0.545	0.254	0.264
6	Packed date	0.053	0.834	0.028
7	Expiry date	0.033	0.807	-0.019
8	Storage condition	-0.057	0.621	0.387
9	Price	-0.183	0.522	0.175
10	Vegetarian or non-vegetarian	0.009	-0.054	0.75
11	Net content	0.146	0.35	0.637
12	Instructions for use	0.166	0.317	0.603
13	Nutrition information	0.447	-0.037	0.602
14	List of ingredient	0.293	0.472	0.482

Source: Computed (Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations)

Table 4.5 showing the factor score coefficients can be calculated for all variables from the factor analysis results arrived above, which are then used to calculate the factor scores for each individual. Since PCA was used in extraction of initial factors, all methods will result in estimating same factor score coefficients. However, for the

study, original values of the variables were retained for further analysis and factor scores were thus obtained by adding the values (ratings given by the respondents) of the respective variables for that particular factor, for each respondent. Thus, the 14 variables in the data are reduced to three factor model and each factor is identified with the corresponding variables as follows:

Table 4.5: showing the factors identified against statements relating to the Factors Influencing Purchase of Packaged Food and beverages Product

S. No	Statement	Factor	Factor Name
1	Country of origin	Factor 1	Manufacturer's Influence
2	Brand name		
3	Symbol of standard		
4	Batch/lot identification		
5	Name of the Manufacturer		
6	Price		
7	Expiry date		
8	Storage condition	Factor 2	Packing Influence
9	Packed date		
10	Net content		
11	Nutrition information		
12	Instructions for use	Factor 3	Content Influence
13	List of ingredient		
14	Vegetarian or non-vegetarian		

Source: Computed

Conclusion
The study employed Principal Component Analysis (PCA) to reduce 14 variables related to packaged food and beverage purchases into three key factors. The KMO value of 0.806 and a significant Bartlett's Test confirmed the data's suitability for factor analysis. Three components were extracted, explaining a cumulative variance of 57.384%. After Varimax rotation, variables were grouped under three interpretable factors: Factor 1 (Manufacturer's Influence): Includes country of origin, manufacturer's name, batch/lot ID, standard symbols, and brand. Factor 2 (Packing Influence): Includes packed date, expiry date, storage condition, and price. Factor 3 (Content Influence): Includes vegetarian symbol, net content, usage instructions, nutrition info, and list of ingredients. The rotated component matrix improved clarity in identifying the grouping of variables. Factor scores were calculated using original variable ratings to enable further analysis. These findings help understand the key influences on urban consumer purchase decisions. Urban food purchasing behaviour in Raipur is shaped by a mix of social, cultural, technological, and psychological factors. Media influence including TV ads, YouTube, Instagram, and social media reviews plays a major role in shaping consumer preferences, especially among the youth. Peer pressure, family habits, and cultural customs also influence food choices. The rise of digital platforms has further transformed urban food buying. Consumers increasingly use mobile apps, digital payments, and subscription-based services for food purchases. Even older customers are adapting due to the convenience of doorstep delivery and cash back offers. Ultimately, choices are driven by price, quality, convenience, branding, and social influence, with urban consumers becoming more aware and brand-conscious. Based on these findings, it is suggested

that food and beverage manufacturers enhance brand transparency and authenticity, focus on innovative and sustainable packaging, and strengthen digital marketing to engage consumers effectively. Providing user-friendly online services, personalized offers, and loyalty programs can further boost satisfaction, while awareness initiatives on food safety and labeling can build trust. An integrated strategy combining product quality, technology, and social engagement is essential to meet the changing expectations of Raipur's urban consumers and foster lasting brand loyalty.

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