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Factors influencing the consumer purchasing decision of potato-based products in Raipur district of Chhattisgarh

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Abstract

Potato-based products represent a rapidly growing sector of Indian food processing industry. The present study explores the consumer socio-economic characteristics, brand awareness, variety of potato-based products available and the factors which are influencing the purchase in Raipur district of Chhattisgarh. 90 respondents were interviewed who were consumers of the potato-based products using pre structured interview schedule. Findings indicated that most of the consumer were majorly young (48.89%), male (58.89%) and students (66.67%). Lay's had highest level of awareness (92.22%), followed by Haldiram's (75.56%). Factor analysis was employed using principal component analysis and varimax rotation on 16 variables to extract the variables through SPSS software (KMO = 0.621, Barlett's chi square = 36.760, $p < 0.001$). Six principal components extracted from the analysis which explains 67.093% of total variance, including economic factors, brand consciousness and marketing, product quality and consumption behaviour, taste appeal and display, accessibility and convenience which influences the choice of consumer before purchasing. Product quality (mean = 4.19) was most important factor influencing consumer's purchase decision.

Keywords: Socio-economic characteristics, potato-based products, brand awareness, factor analysis

Introduction

Food consumption habits in Indian are changing remarkably. Changing lifestyle, rapid urbanization, increasing income, women participation in workforce has shaped transformation in such dietary (Thapa and Thapa., 2019 and Rana *et al.*, 2014) [7, 6]. This change in demography of population has led to change in consumer choices and buying pattern. Today's modern food consumption pattern seeks for convenient, time saving, quality and price worthy food. This turn in food pattern has led to increase in demand of processed and instant foods. The sector recorded an average growth rate of nearly 6.55% as compared with 4.43% in agriculture and allied sector (Ministry of Food Processing Industry, 2025) [1]. The growth of food processing sector has an important role in Indian economy with its contribution to GDP with its employment generation and investment as the sector raises farmer incomes and enhances Indian and export market for value-added agricultural produce.

Potato-based products have gained considerable demand, among processed foods, particularly in the snack products (Marwaha *et al.* 2010) [5]. India's total potato production is about 58.57 million tonnes in year 2024-2025 (Ministry of Agriculture and Farmer Welfare) and it ranks second in terms of consumption with per capita consumption of 27.9 kg (FAOSTAT, 2023) [2]. Despite this significant potato production, India processes only 7% of its production, indicating significant scope for value addition and expansion of the potato processing industry (Hu *et al.*, 2025) [4]. These

developments in the processed potato sector are not limited to major metropolitan cities but are also seen in emerging urban centres. Raipur being a tier II city, witnessed changes in food consumption patterns associated with urbanization, changing lifestyles and increasing demand for convenient and ready to eat foods. Therefore, analysing of factors influencing the consumption of potato-based products is important for understanding the change in consumer preferences. Product quality, brand loyalty, price sensitivity showed significant effect towards purchase intention. Since tier II city consumers were budget-conscious yet willing to pay for premium quality as income rises (Gupta and Priti, 2025) [3], a tier II city like Raipur presents similar scenario to study these dynamics. Factors such as marketing and habitual influence, brand and freshness orientation, sensory appeal, price sensitivity, flavour and economic status, social influence affects consumer preferences (Viradiya and Jadeja, 2026) [8]. This study contributes to understanding the demand side of potato value chain. Understanding consumer purchase behaviour improves market linkages from processors and retailers to potato growers.

Objective

- To study the socio-economic profile of consumers of potato-based products.
- To identify major potato-based products and brands available and purchased in market of Raipur district and to assess consumer's brand awareness.

- To analyse factors influencing purchase of potato-based products.

Materials and Methods

The study was undertaken in Raipur city, Chhattisgarh. The data for the present study was obtained from 90 consumers of Raipur district. The data was collected using multistage sampling technique from selected major urban localities of Raipur including Jora, Pandri, Telibanda, Mova, Sarona, Tatibandh, Bhatagaon, Shankar Nagar and Devendra Nagar, based on higher retail outlet concentration and consumer accessibility. The required data was collected by pre-structured schedule through personal interview method. The data collection was majorly done by primary data with the support of secondary data. The socio-economic profile of consumers and the product and brand portfolio were analysed using percentage analysis. Factor analysis was used to analyse the factors influencing purchase of potato-based

products using principal component analysis with varimax rotation on 16 variables to extract the variables with Kaiser-Meyer Olkin (KMO) and Bartlette's test of sphericity to measure sampling adequacy and suitability of data.

Results and Discussion

The socio-economic profile of the selected consumers is presented in Table 1. About half of the consumers (48.89%) belonged to the 21-30-year age group, and majority of the respondents were male (58.89%). Most of the respondents were well educated, 36.67% were graduates and 30.00% were postgraduates and above and none of the respondents were illiterate. A large portion of respondents (66.67%) were students and 43.33 per cent of consumers belonged to highest monthly family income group of Rs. 50,000. Most respondents were non-vegetarian (73.33%), belonged to nuclear families (67.78%) and had small family size of 5 members (41.11%).

Table 1: Socio-economic characteristics of surveyed consumers of potato-based products

Particulars	Categories	No. of respondents	Percentage
Age	<20	20	22.22
	21-30	44	48.89
	31-40	19	21.11
	>40	7	7.78
Gender	Male	53	58.89
	Female	37	41.11
Education	Illiterate	-	-
	Primary	2	2.22
	Higher secondary	28	31.11
	Graduate	33	36.67
	Postgraduate and above	27	30.00
Occupation	Student	60	66.67
	Government	10	11.11
	Private job	11	12.22
	Business	6	6.67
	Home maker	1	1.11
	Other	2	2.22
Monthly family income (Rs.)	<10000	7	7.78
	10000 – 20000	6	6.67
	20000 – 30000	16	17.78
	30000 – 40000	10	11.11
	40000 – 50000	12	13.33
	>50000	39	43.33
Food type	Vegetarian	24	26.67
	Non - vegetarian	66	73.33
Family type	Nuclear	61	67.78
	Joint	29	32.22
Family size	Small (below 5 members)	37	41.11
	Medium (5 -7 members)	24	26.67
	Large (more than 7 members)	29	32.22

Major potato-based products and brands available and purchased in markets of Raipur district

Consumers in Raipur were found to have access to a diverse range of potato-based products marketed by both national, multinational and regional companies. Frozen products such as frozen aloo paratha, frozen aloo tikki, frozen french fries, potato nuggets were marketed under brands such as ITC Master chef, McCain, Amul, Haldiram's. Potato chips were

marketed under brands such as Lay's, Bingo, Uncle Chips, Balaji, Too Yumm, Diamond, Chheda's and Pringles. Aloo bhujia and potato sticks were marketed under Haldiram's, Bikaji, Bikano and Parle, while potato dried papad was marketed under Mother's Recipe and Ramji brands. Under the category of potato biscuits, wedges and wafers were marketed by Britannia, Pran, Amul and McCain.

Table 2: Major potato-based products and brands available and purchased in market of Raipur district

Company name	Brand name	Product
ITC Limited	Aashirvaad	Frozen Aloo Paratha
ITC Limited	ITC Master Chef	Frozen Aloo Tikki
ITC Limited	ITC Master Chef	Frozen French Fries
ITC Limited	Bingo	Potato Chips
McCain Foods Ltd.	McCain	Frozen Potato Nuggets
McCain Foods Ltd.	McCain	Frozen Aloo Tikki
McCain Foods Ltd.	McCain	Frozen French Fries
McCain Foods Ltd.	McCain	Wedges
McCain Foods Ltd.	McCain	Potato Nuggets
Gujarat Cooperative Milk Marketing Federation	Amul	Aloo Tikki
Gujarat Cooperative Milk Marketing Federation	Amul	Frozen French Fries
Haldiram Snack Food Pvt. Ltd.	Haldiram's	Mini Samosa
Haldiram Snack Food Pvt. Ltd.	Haldiram's	Chips
Haldiram Snack Food Pvt. Ltd.	Haldiram's	Bhujia
Jabsons Food Pvt. Ltd.	Jabsons	Dry Samosa
PepsiCo	Lays	Chips
PepsiCo	Uncle Chips	Chips
DFM Food Ltd.	Crax	Chips
DFM Food Ltd.	Crax	Potato Sticks
Guiltfree Industries Limited	Too Yumm	Chips
Prataap Snacks Ltd.	Diamond	Chips
Balaji Wafers Pvt. Ltd.	Balaji	Wafers
Balaji Wafers Pvt. Ltd.	Balaji	Chips
Chheda Specialities Food Pvt. Ltd.	Chheda's	Chips
Chheda Specialities Food Pvt. Ltd.	Chheda's	Wafers
Chheda Specialities Food Pvt. Ltd.	Chheda's	Potato Sticks
Bikaji Foods International Ltd.	Bikaji	Aloo Bhujia
Bikanervala Food Pvt. Ltd.	Bikano	Aloo Bhujia
Unibic Food India Pvt. Ltd.	Unibic	Potato Biscuit
Parle Chatkeens Aloo Bhujia	Parle	Aloo Bhujia
Kellogg Comp.	Pringle's	Chips
Desai Food PVT. Ltd.	Mother's Recipe	Potato Dried Papad
Britannia Industries Ltd.	Britannia	Potato Biscuit
Pran Beverages (India) Pvt. Ltd.	Pran	Potato Biscuit
Kimmi Food Products	Ramji	Potato Dried Papad

Brand awareness of consumers about potato - based products in Raipur district

Brand awareness was highest for Lay's (92.22%), followed by Haldiram's (75.56%), Uncle Chips (64.44%) and Bingo

(10.00%). Crax (13.33%) had the lowest awareness among consumers, indicating that although a wide range of brands were available in the markets, consumers remain concentrated around a popular and well-established brands.

Table 3: Brand awareness of consumers about potato - based products in Raipur

Brand	Awareness level (No. of respondents)	Awareness per cent
Bingo	56	62.22
Lays	83	92.22
Uncle Chips	58	64.44
Diamond	21	23.33
Bikaji	34	37.78
Haldiram's	68	75.56
Chheda's	28	31.11
McCain	21	23.33
Crax	12	13.33
Britannia	20	22.22
Pringles	24	26.67
Balaji	43	47.78
Pran	23	25.56
Too yummm	19	21.11
Bikano	9	10.00

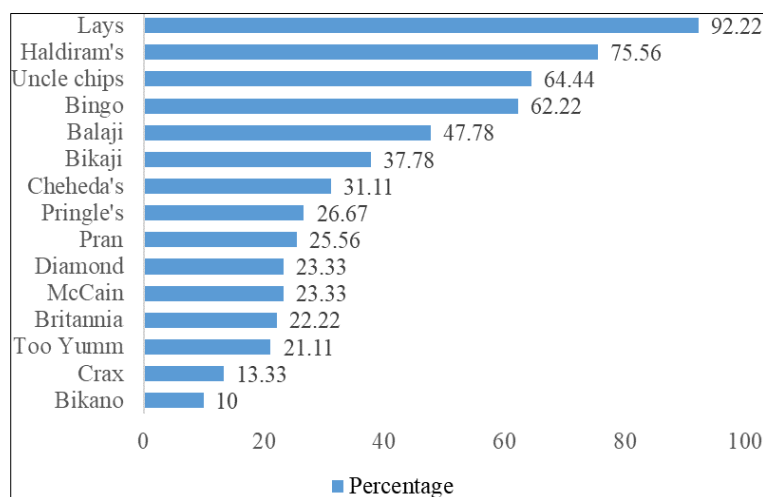


Fig 1: Brand awareness of consumer about potato - based products in Raipur district

Factors influencing purchase of potato-based products in Raipur

Before applying factor analysis, it is desirable to check the assumptions of factor analysis. The first assumption is sampling adequacy for factor analysis while, the second assumption existence of correlation between variables.

Table 4: KMO and Bartlett's test for variance among factors influencing consumer preferences for potato - based products

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.621
Bartlett's Test of Sphericity	Approx. Chi-Square	368.760
	Degree of freedom	120
	Significance level	<0.001

Table 4 present the results of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's test for variance among factors influencing consumer preference for potato-based products. The KMO value with 0.621, indicating adequate sample size as KMO value of more than

0.5 indicated that the sample was adequate to apply factor analysis. Bartlett's test Chi-square was found to be 368.760 with significance value < 0.001, confirming that variables were significantly correlated. Thus, both assumptions required for the factor analysis were satisfied. Communalities represent the amount of variance in each variable that is explained by the extracted factors. The communality values of all the variables were more than the threshold value of 0.50, indicating that the extracted factors adequately explained the variance of each variable.

Principal Component Analysis (PCA) with Varimax rotation was used to extract the factors with Kaiser criterion as the basis to determine the factors. The Kaiser criterion (eigenvalue >1) was adopted to determine the number of factors. The eigenvalues for initial 6 factors extracted were found to be 3.390, 2.264, 1.506, 1.436, 1.092 and 1.046 respectively. The rotated factor solution extracted six factors, which together explained 67.093 of the total variance (Table 5).

Table 5: Total Variance explained

Component	Total	Initial Eigenvalues		Extraction sums of squared loadings			Rotation Sums of Squared Loadings		
		% of variance	Cumulative%	Total	% of variance	Cumulative%	Total	% of variance	Cumulative%
1	3.390	21.188	21.188	3.390	21.188	21.188	2.616	16.349	16.349
2	2.264	14.147	35.335	2.264	14.147	35.335	1.907	11.920	28.270
3	1.506	9.415	44.750	1.506	9.415	44.750	1.703	10.647	38.916
4	1.436	8.978	53.728	1.436	8.978	53.728	1.580	9.876	48.793
5	1.092	6.826	60.554	1.092	6.826	60.554	1.505	9.409	58.202
6	1.046	6.539	67.093	1.046	6.539	67.093	1.423	8.892	67.093
7	0.839	5.245	72.339						
8	0.814	5.085	77.424						
9	0.734	4.589	82.012						
10	0.649	4.055	86.068						
11	0.572	3.577	89.644						
12	0.462	2.887	92.531						
13	0.387	2.420	94.951						
14	0.333	2.080	97.031						
15	0.269	1.678	98.709						
16	0.207	1.291	100.000						

Table 6 represents the rotated component matrix derived from Principal Component Analysis, using the Varimax rotation method with Kaiser normalization. The analysis

reduced the sixteen observed variable into six underlying components or factors influencing consumer preference towards potato - based products. Each extracted factor

grouped together variables with strong inter-correlation. Variables with factor loadings of 0.50 and above were considered for interpretation and naming factors.

Component 1: Economic Factor

Component 1 showed high factor loading on Price (0.868), Income (0.846) and Discounts (0.799). These variables related to price sensitivity and economic considerations. Thus, the component labelled as Economic Factors.

Component 2: Brand Consciousness and Marketing

This component was characterized by high loading on Brand Image (0.799), Packaging (0.704), Advertisement (0.678). This shows consumers concern about brand name and product visual and exposure.

Component 3: Product Quality

Quality (0.807) and Expiry date (0.631) showed high factor loading on this component which indicated product quality consciousness among consumers before purchase of potato-based products.

Component 4: Product Information and Consumption Behaviour

This component had high factor loading on Manufacturing details (0.817), Family Influence (0.590), Food Habit (0.501). All the three variables were associated with the product information, habitual and social influence. Hence, the dimension termed as Product Information and Consumption Behaviour.

Component 5: Taste Appeal and Display

This component contains Taste (0.703), Displays (0.673) and New Product Displays (0.564) which are related to sensory and product display. Therefore, labelled as Taste Appeal and Display.

Component 6: Accessibility and Convenience

This component had high factor loading on Availability (0.776) and Convenience (0.615) of the potato - based products which showed consumers considered availability of product and convenience of food which influenced purchase of potato - based products.

Table 6: Rotated Component Matrix

Variables	Principal Components					
	PC1	PC2	PC3	PC4	PC5	PC6
Price	0.868	0.46	-0.27	-0.097	0.067	-0.062
Income influence	0.846	0.155	-0.156	0.062	0.046	-0.14
Discounts	0.799	-0.005	0.007	0.068	0.055	0.101
Brand image	0.052	0.799	0.092	-0.041	-0.049	0.124
Packaging	-0.043	0.704	0.266	0.179	0.196	0.041
Advertisement/promotion	0.161	0.678	-0.346	0.144	0.051	0.256
Quality	0.014	0.051	0.807	0.022	0.013	0.130
Expiry date	0.305	0.113	0.631	-0.028	-0.112	-0.280
Manufacturing detail	0.028	0.312	0.029	0.817	-0.098	-0.043
Family influence	0.377	-0.027	-0.086	0.590	-0.039	0.435
Food habit	0.460	-0.144	-0.038	0.501	0.046	-0.018
Taste	0.063	0.216	0.338	-0.259	0.703	-0.004
Displays	0.150	-0.086	-0.207	-0.040	0.673	0.163
New product displays	-0.041	0.134	-0.445	0.329	0.564	-0.177
Availability	-0.036	0.250	-0.082	-0.087	-0.038	0.776
Convenience	-0.005	0.135	0.241	0.237	0.399	0.615

Note: Extraction: Principal Component Analysis

Rotation method: Varimax with Kaiser Normalization

Descriptive Statistics of extracted factors

Table 7 presents the mean and standard deviation of extracted factors influencing potato - based products. With highest mean score (mean= 4.19, SD= 0.77), product quality indicated as the most important factor influencing consumption of potato-based product, followed by Accessibility and Convenience (mean= 3.72, SD= 0.79),

Taste Appeal and Display (mean= 3.54, SD= 0.77), Brand Consciousness and Marketing (mean= 3.49, SD= 0.86), Economic Factor (mean= 3.31, SD= 1.05). Whereas, Product Information and Consumption Behaviour (mean= 2.90, SD= 0.98) was the least important factor which influenced consumer consumption of potato - based products.

Table 7: Descriptive Statistics of extracted factors

Factors	Underlying variables	Mean	SD
Economic Factor	Price, Income, Discount	3.31	1.05
Brand Consciousness and Marketing	Brand image, Packaging, Advertisement	3.49	0.86
Product Quality	Quality, Expiry date	4.19	0.77
Product Information and Consumption Behaviour	Manufacturing details, Family Influence, Food habit	2.90	0.98
Taste Appeal and Display	Taste, Displays, New product displays	3.54	0.77
Accessibility and Convenience	Availability, Convenience	3.72	0.79

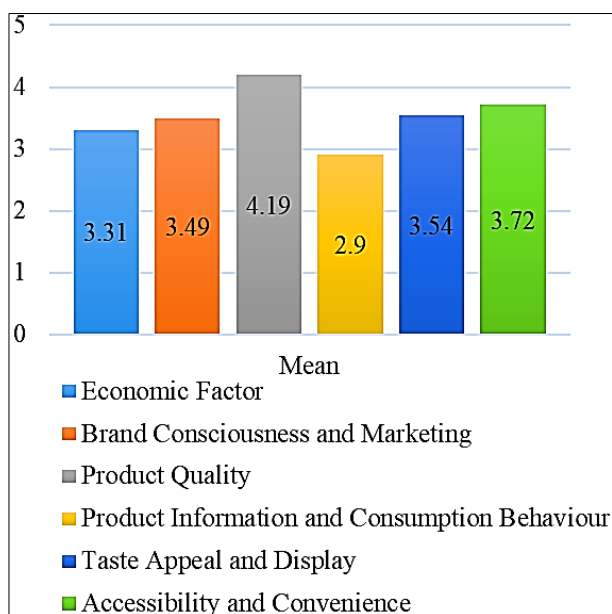


Fig 2: Mean score of extracted factors influencing purchase of potato - based product in Raipur.

Conclusion

The above study mainly aimed to understand factor influencing the purchase of the potato-based products. The study confirmed that there was a wide range of products available in the Raipur district of Chhattisgarh from international brands to local brands with major consumer from age group of 21-30 year. Most of the consumers found to be students and were graduates and belonged to non vegetarian category. Lay's was the most popular brand among almost all the consumers. Findings of the study indicated that consumers choices to purchase the potato-based products was influenced by numbers of factors including economic factors, brand consciousness and marketing, product quality and consumption behaviour, taste appeal and display, accessibility and convenience. Product quality was found to be the most important factor to influence consumer's purchase, followed by the availability and convenience of the products. As product quality found to be the most important drivers of consumptions, manufacturer should give more emphasis quality assurance by developing healthy variants and labelling quality related attributes on the packaging. Further study could increase the sample size and geographical coverage which will be helpful to identify the consumer behaviour across different regions. Further study could increase the sample size and geographical coverage which will be helpful to identify the consumer behaviour across different regions.

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