Consumer Buying Pattern of Processed Food Products in National Capital Region of India

Binkey Srivastava

Abstract: Indian food consumption pattern have seen tremendous chain in millennial years with rapid change in people lifestyles. The motivation behind this investigation is to investigate the statistic and psychographic factors influencing purchaser purchasing of processed food products. The investigation was led in the city of Noida, Ghaziabad and Gurugram. The sample size based on convenience sampling is of 300 consumers. The data collected was analyzed using SPSS software. The analysis tool used for this study is exploratory factor analysis, t-test, ANOVA, Chi-square test and Regression. Research uncovered that Changing Lifestyles, external influence, health and quality concern are the major factors affecting the processed food consumption. The primary significant marketing implication is that the marketers should strongly focus on quality and customer service as unique selling proposition of processed food products and explore the opportunities for development of new market segment.

Keywords: Consumer buying pattern, processed food products, External factors, Quality, Buying Pattern

I. INTRODUCTION

Indian food consumption pattern have seen tremendous chain in millennial years with rapid change in people lifestyles. The cooking and utilization design shifts definitely from northern part to southern piece of India¹. The bustling way of life of today encourages people for easy and quick cooked food rather than complex time taking food items¹⁴. As families become nuclear, preference for processed foods is on increase. After the revolution in information technology and biotechnology, India is now witnessing revolution in food technology. As per the Ministry of Food Processing Industries (MOFPI) nourishment and basic supply market of India is the world's 6th biggest. The Indian nourishment preparing industry one of the biggest ventures in India covers 32 percent of the nation's aggregate food sell³. The transformation of the socio economic conditions of consumers in India is one of the key drivers to bring change in food processing market⁴.

Key Factors²⁶ for the increase in demand of processed foods are:

- Rise in the disposable income, changing lifestyles, urbanization and more women at workplace².
- > Evolution and heterogeneity in Indian demography.

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- India access a larger growing market for processed food products with decrease in prices of such products.
- Easy accessibility with development of organized retail formats.
- Nuclear families with working women results in busy schedules thus aroused the need of processed and convenience foods⁵.
- Increase in disposable income, urbanization and growth of dairy industry may enhance the buyer for significant dairy products such as butter, processed cheese, etc.
- Indian processing food market is expected to rise⁷ from US\$258 billion in 2015 to US\$ 482 by 2020.
- Investments in food processing infrastructure will be more with launch of various infrastructure development schemes²⁵.

II. LITERATURE REVIEW

- Jorin (1987) contemplate changes in spending force and purchasing propensities for Swiss customers. Research observed that youth are more concern with pleasure and less of health so more demand for convenience foods.
- Puri and Sanghera (1989) examined the utilization example of handled items in Chandigarh. It was discovered that jelly was most famous among all income groups. For high and middle income families orange squash was preferred and with increase in income level pineapple juice consumption increased.
- Rees¹³ (1992) identified that the change in demographic and household roles had made strong sale of chilled and other prepared foods among large numbers of convenience seeking working women and single people.
- Amitha (1998) inspected the variables influencing the utilization of chose dairy items in Bangalore city²¹. The examination uncovered that, pay had a positive and cost negatively affected the table spread utilization.
- Kamalaveni and Nirmala (2000) watched that, family estimate, age, yearly salary and occupation had much convinced on purchasing of the instantaneous food items²¹.
- Srinivasan (2000) identified that, buyer for processed products are those with higher educational and income level. Consumers preferred ready to eat form for convenience but change in price above 5% result in discontinue of the use²¹.



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- Acording to Lampila et al. (2007), demand for ready to eat food category grows and vary from ready to eat to easy to cook if consumers is aware of such kind of product.
- Prasad and Aryasri (2008) in his study showed that life style changes, more working women and lack of time are the major factors for purchase of packed food products.
- Selvarajn, 2012 in his study found that difference in taste of home cooked food and ready to eat food as one of the major reason for not using ready to eat food²². Further the unawareness, lack of interest, high price and nutrition issues about such products were other reasons for not buying these products.
- Kumar H. et al. (2013): in his study found that gap exist in consumer's awareness and safety perceptions used in packed/canned food which required to be addressed by public awareness campaign²³.
- Priyadarshini, Vijayeta (2015) research study indicated a positive inclination towards ready to eat food. The ease of cooking, time saving and change in traditional food eating habits resulted in rise of frequency of buying such products²⁴.

III. RESEARCH METHODOLOGY

Research Objective

The motivation behind this investigation is to investigate the statistic and psychographic factors influencing purchaser purchasing of processed food products. The research objectives of this research are as per the following:

- To examine the consumer buying behavior of processed food products.
- To find the determinant factors of the respondent for their purchasing decision.
- To examine customers' buying intention for their foods preferences and change in buying pattern.

Research design

The research study was intended to understand the consumer buying pattern of the processed food products in National Capital Region of India. The study was conducted in the city of Noida, Ghaziabad and Gurugram. The deliberations for selecting these cities were more of working couple population, rising demand for processed food products and diverse income level groups. Diverse earning groups of household consumers were preferred to collect the information. The sample size based on convenience sampling is of 300 consumers. The data collected was analyzed using SPSS software. The analysis tool¹⁶ used for this study is exploratory factor analysis, t-test, ANOVA¹⁷, Chi-square test and Regression.

Reliability Test

Reliability is how much a scaled inventory would create reliable outcomes on rehash information gathered and is assessed by deciding the level of efficient variation in a scale. Cronbach's Alpha coefficient of a scale is the marker

Retrieval Number C4718098319/2019©BEIESP DOI: 10.35940/ijrte.C4718.098319 Journal Website: <u>www.ijrte.org</u> of interior consistency estimate of reliability of test scores, with the acceptable value above 0.7. The value below 0.7 is an indication for internal consistency reliability to be unsatisfactory. This research study based on twenty two items scale questionnaire assesses the Cronbach's Alpha internal consistency reliability.

Cronbach's Alpha	No. of Items
0.899	22

Refer Table 1 the reliability statistics showed 0.899 Cronbach's Alpha coefficient of the buying motivation scale of the research. Since the value is above the necessary 0.7 Cronbach Alpha acceptable ideal, the scale items indicate a satisfactory internal consistency with reliable statistics.

Factor Analysis

Factor analysis¹⁵ is a statistical process is used to describe variations among correlated observed variables in terms of a potentially less number of unobserved variables. Exploratory factor analysis is done to investigate relationships among main interval questions. Exploratory factor analysis is used for data reduction to a smaller group of variables and to explore the underlying hypothetical structure of the phenomena²⁰. It is used to identify the number of factors that best represents the scale items in terms of respondent data and which factor of each scale item is most high. In this study the Principle Component Analysis¹⁹ (PCA) method of Exploratory Factor Analysis process is used to explore the basic structure of the Indian women purchasing motivations and their correlations in the data obtained. The initial scale items are transformed into linear combinations of smaller groups, with all variance in the data being used.

Data Analysis

The data analysis in the Exploratory Factor Analysis procedure to evaluate data suitability (factorability) is done by utilizing Bartlett's Test of Sphericity and Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO).

Bartlett's Test of Sphericity

Bartlett's Test of Sphericity if demonstrates small estimations of under 0.05 of the significance level show that a factor examined might be viewed as appropriate. As found in Table 2 the significant estimation of Bartlett's Test of Sphericity p=0.000, the Exploratory Factor Analysis is appropriate, in view of the KMO sampling precision yield.

Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO)

Kaiser Meyer Olkin Measure of Sampling Adequacy (MSA) was processed to discover the extent of difference in factors that may be caused by basic components. It esteem near 1.0 generally demonstrate that a factor analysis is helpful with information. In the event that the esteem is under 0.50, the consequences of the component analysis presumably won't be exceptionally helpful. The test discovered inspecting sampling precision of 0.822 which indicates factor investigation is valuable for data collected.



Table 2 Dartiett's Test and KWO				
Kaiser Meyer (Olkin Measure of	0.822		
Sampling Adeq	uacy			
Bartlett's Test	Approximate	3250.219		
of Sphericity	Chi-Square			
	Df	261		
	Significance	.000		
	level			

Table 2 Bartlett's Test and KMO

After assessing the data factorability, the data extraction is done using Principal Components Analysis (PCA). As shown in Table 3 the data extraction of one factor represents 63.55% of the inconsistent relationship among variables. The components that have Eigen estimation of at least 1 have been traced. So this research data identified first five components with Eigen value more than 1.

Factor variable loading might be affirmative or nonaffirmative. The variable reciprocal relationship with rest of the components is shown by non-affirmative loading. More elevated the loading more significant is the factor variable. This research has all the factor loadings in positive

Initially as the factors extracted varies from each other so to further find which item load on which factor, the factor rotation is calculated. The research found only five factors with Eigen value more than 1 for usage of processed ready to eat meal.

The corresponding Eigen values for five components were 3.918, 2.387, 2.284, 2.341 and 1.905. (SPSS¹⁸ Output Table 3) The level of total variance is utilized as a marker for analysis of how much the total factor arrangement implies for what the factors together signify. The marker for existing arrangement signifies for 63.545% of the total variations for compensatory utilization. This extraction is considered better to lessen 22 numbers of factors to 5 factors. However 33.12% information content is dropped for factors marking use of processed food items in Ghaziabad. The variance explained percentage for factors one to five in order are 20.985, 12.373, 11.311, 10.215 and 8.661 (SPSS Output Table-3).

Comp	p Eigen values Initially		Sums of Squared Loadings			Sums of Squared Loadings			
onent				Extraction			Rotation		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
	Total	%	%	Total	%	%	Total	%	%
1	7.908	35.904	35.904	7.908	35.904	35.904	3.918	20.985	20.985
2	2.132	8.974	44.878	2.132	8.974	44.878	2.387	12.373	33.358
3	1.555	7.321	52.199	1.555	7.321	52.199	2.284	11.311	44.669
4	1.264	6.22	58.419	1.264	6.22	58.419	2.341	10.215	54.884
5	1.01	5.126	63.545	1.01	5.126	63.545	1.905	8.661	63.545
6	.887	4.744	68.289						
7	.812	3.642	71.931						
8	.801	3.894	75.825						
9	.712	3.198	79.023						
10	.614	2.894	81.917						
11	.541	2.121	84.038						
12	.512	2.326	86.364						
13	.508	2.828	89.192						
14	.408	1.863	91.055						
15	.345	1.499	92.554						
16	.319	1.435	93.989						
17	.321	1.315	95.304						
18	.290	1.427	96.731						
19	.241	1.001	97.732						
20	.201	0.889	98.621						
21	.154	0.701	99.322						
22	.149	0.678	100.000						

Components Matrix

The Components Matrix considering the Exploratory Factor Analysis indexes each of the nine components for each scale items loads. Scale item loadings with 0.5 and above are considered as valid with the highest loading on that component. Later using Varimax Rotation this Components Matrix is rotated to get its results outcome. Table 4 showing only loadings of 0.5 and above factor. A high degree of variations has been observed through the factor analysis. Following is the interpretation of five factors:

IV. FACTORS ANALYSIS AND INTERPRETATION

The buying motivation factors of this study had been derived through Exploratory Factor Analysis using Principle Component Analysis. The factors names are allocated based on the interpretation of processed cereal food consumption factor scale items. The following is the detail discussion:



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		С	ompone	nt	
	1	2	3	4	5
Processed food Products are nutritious					.699
Processed food products are tastier					.786
Working Women in home					
Improved Quantity				.766	
Extended shelf life of the products				.724	
Brand Image					
Preference of children	.6.89				
Ease of storage.	.498				
Increase disposable income	.591				
Luring Promotional Offers		.801			
Friends advice		.623			
Ease of cooking					
Retailers Approach		.711			
Advertisements		.701			
Attractive Packaging		.831			
Choice of various flavours		.734			
Ease of Availability		.607			
Health awareness			.589		
Usage of these products is a recent trend			.634		
Fair charges					
Good Quality					
Doctors reference			.679		

Table No. -4 Rotated Component Matrixⁱ

Method of Extraction: Principal Component Analysis.

Method of Rotation: Varimax with Kaiser

been observed with the topmost rated value of `Total Variance Explained. Based on academic literature inclusion of identified scale items related to processed cereal food consumption it has been interpreted as Changing Lifestyle. As shown in Table 4a.

factor of Total Variance Explained. Based on academic

literature inclusion of identified scale items related to

processed cereal food consumption it has been interpreted as

Normalization.

1. Changing Lifestyle

The factor Changing Lifestyle was the first factor that has

Table 4a Factor loadings for Changing Lifestyle ¹

		<u> </u>	
Preference of children	.6.89]
Ease of storage.	.498]
Increase disposable income	.591]
		External influence has b	been identified

Factor 1 Changing Lifestyle is related to the variables: Preference of children, Ease of storage and Increase disposable income. These variables are item scaled with Factor 1 loading.

2. External Influence

0	
Luring Promotional Offers	.801
Friends advice	.623
Retailers Approach	.711
Advertisements	.701
Attractive Packaging	.831
Choice of various flavours	.734
Ease of Availability	.607

Factor 2 External Influence is related to the variables: Luring Promotional Offers, Friends advice, Retailers Approach, Advertisements, Attractive Packaging, Choice of various flavours and Ease of Availability. These variables are item scaled with Factor 2 loading.

3. Extra Health Consciousness

`External Influence. Refer Table 4b.

The factor Extra health consciousness was the third factor that has been observed with the highest Total Variance Explained value.



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Based on academic literature inclusion of identified scale items related to processed food consumption it has been interpreted as Extra health consciousness. As shown in Table 4c

Table 4c Factor loadings for Extra Health Consciousness³

Health awareness	.589
Usage of these products is a recent trend	.634
Doctors reference	.679

Factor 3 Extra Health Consciousness is related to the variables: Health awareness, Usage of these products is a modern trend and Doctors recommendation. These variables are item scaled with Factor 3 loading.

4. Quality Concern

The factor Quality concern was the fourth factor that has been observed with the highest Total Variance Explained value. Based on academic literature inclusion of identified scale items related to processed food products consumption it has been interpreted as Quality Concern. As shown in Table 4d

Table 4d Factor loadings for Quality Concern⁴

Improved Quantity	.766	
Extended shelf life of the products	.724	

Factor 4 Quality Concern is related to the variables: Improved Quantity and Extended shelf life of the products. These variables are item scaled with Factor 4 loading.

5. Taste and Nutritional value

The factor Taste and Nutritional value was the fifth factor that has been observed with the highest Total Variance Explained value. Based on academic literature inclusion of identified scale items related to processed food products consumption it has been interpreted as Taste and Nutritional value. As shown in Table 4e

Table 4e Factor loadings for Taste and Nutritional value⁵

Processed food Products are nutritious	.699
Processed food products are tastier	.786

Factor 5 Taste and Nutritional value is related to the variables: Processed food products are nutritious and processed food products are tastier. These variables are item scaled with Factor 5 loading.

V. RESULTS

Based on Exploratory analysis the names assigned to each factor are an outcome of the following analysis of factor scaled items of buying of processed food:

a) Changing Lifestyle

The factor Changing Lifestyle was the first factor that has been observed with the topmost rated value of `Total Variance Explained. Based on academic literature inclusion of identified scale items related to processed cereal food consumption it has been interpreted as Changing Lifestyle. Factor 1 Changing Lifestyle is related to the variables: Preference of children, Ease of storage and Increase disposable income. These variables are item scaled with

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b) External Influence

External influence has been identified as the second highest factor of Total Variance Explained. Based on academic literature inclusion of identified scale items related to processed cereal food consumption it has been interpreted as `External Influence. Factor 2 External Influence is related to the variables: Luring Promotional Offers, Friends advice, Retailers Approach, Advertisements, Attractive Packaging, Choice of various flavours and Ease of Availability. These variables are item scaled with Factor 2 loading.

c) Extra Health Consciousness

The factor Extra health consciousness was the third factor that has been observed with the highest Total Variance Explained value. Based on academic literature inclusion of identified scale items related to processed food products consumption it has been interpreted as Extra health consciousness. Factor 3 Extra Health Consciousness is related to the variables: Health awareness, Usage of these products is a modern trend and Doctors recommendation. These variables are item scaled with Factor 3 loading.

d) Quality Concern

Quality concern factor was the fourth factor that has been observed with the highest Total Variance Explained value. Based on academic literature inclusion of identified scale items related to processed food products consumption it has been interpreted as Quality Concern. Factor 4 Quality Concern is related to the variables: Improved Quantity and Extended shelf life of the products. These variables are item scaled with Factor 4 loading.

e) Taste and Nutrition value

The factor Taste and Nutritional value was the fifth factor that has been observed with the highest Total Variance Explained value. Based on academic literature inclusion of identified scale items related to processed food products consumption it has been interpreted as Taste and Nutritional value. Factor 5 Taste and Nutritional value is related to the variables: Processed food products are nutritious and processed food products are tastier. These variables are item scaled with Factor 5 loading.

VI. MARKETING IMPLICATIONS

Taste and Inclination

The research findings suggest that processed food products consumption was found more in the population cluster of less than 25 years and 26-35 years as compared to other age clusters. Further it revealed that as compare to males in Ghaziabad females consume more processed food products. The marketers should design the marketing strategies¹¹ for processed food products based on the buying pattern, usage, taste and preferences of these age groups. Further the promotional campaign should be design specifically for these groups. The more focus should be given to males and other age groups by increasing the awareness for processed food consumption as a healthy option.

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Quantity and Quality

The investigation directed by Nandagopal and Chinnaiyan (2003) found that Singles, Graduates, Post Graduates and family estimate 2-4 individuals and 4-6 individuals have more processed food utilization⁹. This implies that marketers should focus on the package size offered because the extent in which processed food items are bought will be considerably affected based on the family size and marital status. Therefore marketers can bring in family size packaging of 2 kg and 5 kg with feasibility of offering at lower price. Further more of the educated people are buying Processed Foods¹⁰ so taste, nutritional values and quality matters more. The marketers should design methodology concentrating on quality and nutritious aspects of such food items. The study indicates that youth and working cluster specifically of private organization shows high consumption of processed food in comparison to public sector employees so manufacturers requires to rethink for manufacturing such products at competitive price.

The study also analyzed that higher income group cluster splurge about Rs.2000 to Rs.5000 for buying these products. Thus to widen the segment and make these product competitive¹², manufacturers should focus on better supply chain strategies thereby reducing the transportation and storage cost leading to reduced MRP.

Health Issues

The research analyzed that people prefer food like Dalia and cornflakes than oats as morning meal rather in day or as super. Hence for Ghaziabad region marketers should design such promotional campaigns highlighting the health benefits of the processed foods. The marketers could also suggest it as an alternative to traditional breakfast due to its ease of cooking. According to various reliable sources such as World Health Organization (WHO) and International Obesity Task Force⁸ (IOTF) within last two decades the tremendous rise in obesity across the globe has enhanced the tribulations associated with obesity among pretween, tween, juvenile and grown-up with more preference for processed meals thereby substituting lunch or dinner meal with snacks. The marketers of fast food industry have used various marketing techniques to encourage people eat more food and target more on school-goers children. The relationship between fast food consumption and obesity has been showcased by various researches at global level²⁷ on enhanced fast food utilization patterns and its effects on the west part of the world.

Advertisement and USP

The consumer buying pattern reflects that processed foods are no more an impulse buying product rather are considered as healthy and easy to cook products. Consumers pick these products only if get an eye on it. Therefore manufacturers should focus on attractive packaging and sales promotion. Marketers could further focus on mass media advertisements through television and newspapers.

However, if any marketer introducing a new assortment of processed food, it could consider the quality of food and customer service as the unique selling prepositions to succeed.

Less Price Sensitive

The respondents from Gurugram were found less price sensitive but extra health and quality concern while buying Processed Food items. This indicates that the manufacturers of Processed Food products should not lower the quality of the products to lower the prices, especially for such consumers. Further it has been analyzed that with any rise or fall in the cost won't move buyers to conventional food rather they may explore other sellers who are providing attractive discount offers on similar items. The buyers may switch to alternative competitive price based branded item if it is better qualitatively. So every marketer should critically analyze these things before entering into the market.

VII. CONCLUSION

The study conclude that processed food products consumption was found more in the population cluster of less than 25 years and 26-35 years as compared to other age clusters. The marketers should design the marketing strategies¹¹ for processed food products based on the buying pattern, usage, taste and preferences of these age groups. Further the promotional campaign should be design specifically for these groups. The more focus should be given to males and other age groups by increasing the awareness for processed food consumption as a healthy option. It is also analyzed that youth and working cluster specifically of private organization shows high consumption of processed food in comparison to public sector employees so manufacturers requires to rethink for manufacturing such products at competitive price. Further the higher income group cluster splurge about Rs.2000 to Rs.5000 for buying these products. Thus to widen the segment and make these product competitive¹², manufacturers should focus on better supply chain strategies thereby reducing the transportation and storage cost leading to reduced MRP. However, if any marketer introducing a new assortment of processed food, it could consider the quality of food and customer service as the unique selling prepositions to succeed. So every marketer should critically analyze these things before entering into the market.

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