

Predicting Factors Influencing Purchase Of Aashirvaad Brand Using Logistic Regression

**Dr. Arunmozhi Ramaiyan*

INTRODUCTION

The demographic variables like age group, gender, occupation and monthly income has its contribution towards the different products launched by corporates. A typical housewife buys her monthly grocery requirements from multiple shops with multiple visits during a month for bulk and top up purchases. There is a paradigm shift in the ultimate decision making. The shift is towards the housewife - who makes purchase decisions independently because of sales promotion, product quality, price and brand awareness of the product.

AGE GROUP AND ITS IMPACT

Age group is a factor that has been used in segmenting the consumer markets. The segment called *Tweens*, that is, children in the 8-12 years age group are estimated to account for 60 percent of the household expenditure, for example, two-thirds of households buying a new car are influenced in the decision by their children. Because of this, Toyota in Australia has included chickens, puppies and kittens in its advertising. The roles played by the different household members vary with the type of product. Today, the age profile for '0-14 years' age group has reduced to 30% because of a clear outcome of the family planning initiatives and girl education programmes. At the same time, the proportion of the population over 65 is expected to rise marginally. But the proportion of the population in the working age is the most keenly watched bracket, which is likely to maintain its healthy growth rate.

GENDER BIAS

Gender is used for segmenting the market for different products. Shopping behaviour of men and women vary. Men prefer to drive a motorcycle, whereas, there are specific brands of scooters targeted towards women. Bajaj Wave, for example, is a brand specifically designed for women. For products like *Atta* (flour), housewives play a significant role in the purchase decision making.

Table 1: Gender Population - Year Wise

	1998	2003	2008
Male population	508	548	587
Female population	473.7	513.6	553
Total population	981.7	1061.6	1140
% of female to total	51.74%	51.62%	51.49%

Source: Economic Intelligence Unit. Population in mn.

INCOME AND ITS ROLE

Income determines the ability of consumers to participate in the market and hence, this is a basic segmentation variable. However, income does not always predict the best consumers for a given product. Even if two consumers have similar income levels, each may own different types and brands of products based on a host of factors - such as lifestyle, attitudes and values. The income distribution among Indian households makes for a pyramidal structure, with almost half the country's households belonging to the low-income group earning less than ₹1,200 per month. The lower middle income group consists of 31% of the country's households, followed by middle - 12%, upper middle - 5% and high - 4%. On the whole, the Indian market is poised for an interesting phase on the basis of the following parameters:

*Senior Lecturer, Department Of Business Administration, Annamalai University, Annamalai Nagar-608002, Tamil Nadu.
E-mail : raarun@rediffmail.com

- ✿ India has a population of more than a billion people.
- ✿ 45% of the population is under 20 years of age.
- ✿ Growing influence from the media has created consumer awareness.
- ✿ Growth of retail markets.

FASTEST GROWING PRODUCT CATEGORIES IN FAST MOVING CONSUMER GOODS

Packaged refined oil and packaged *atta* (flour) are the two product segments that have registered strong double digit growth rates over a five year period according to A. C. Nielsen's India retail audit.

Packaged *atta* has grown by 25% in terms of compounded annual growth rates. In an attempt to discover newer avenues of revenues, FMCG companies have launched product variants. They have made alterations to the pack size besides changing the look and feel of the packaging. These strategies are good enough to trigger the customer's curiosity. Many Multi National Companies (MNCs) have contemplated launching newer products available to their international customers. For example, Pepsi Co has launched the Quaker Oats brand of products for Indian customers. The consumption of *atta* is 45 million tonnes in India, whereas, the branded segment contributes to only two percent (source www.itcportal.com)

NEED FOR THE STUDY

Several factors influence consumers' choice towards the products launched by corporates and among them, creating awareness in the target market is the most important. Product awareness is created through various sources and the success largely depends on the effective use of advertising media. Marketers would be looking for valuable information regarding the type of media that is more efficient and brings the expected results. Hence, there is an imperative need to conduct a study in finding out the media, which is highly powerful in creating awareness for the products.

It is essential for the FMCG players to maintain price for the products on par with the competitors. Consumers react sensitively to any change in price. Managers are desperately searching for information pertinent to consumers' opinion on the pricing strategy adopted for their products. Obviously, a research work focusing on identifying consumers' attitude towards the product they use is needed to provide valuable insights to the firms.

Consumers continuously patronize a product if they are satisfied with the performance of the product. The performance depends on the standard of quality maintained by the company. Executives should know how their product quality is rated by the users. The criticality of collecting quality ratings is further strengthened due to the fact that several products are outsourced.

The success of a product depends on how it is being positioned in the consumer's mind and the appropriate communication strategy adopted by the firms. To decide on the strategy, managers should know how their target customers would react to the products. Especially, consumers belonging to different income, age and gender would differ in their opinion on product characteristics.

OBJECTIVES OF THE STUDY

1. To find out the reasons for buying *Aashirvaad atta*.
2. To identify the sources through which the product awareness is created.
3. To analyze the purchasing pattern behaviour of consumers and their concern for product quality.

RESEARCH METHODOLOGY

This section elaborates upon the Research Methodology used in the study. The study is primarily descriptive in nature.

SURVEY INSTRUMENT USED

A field survey was conducted for data collection from a sample size of 190 respondents in places like Chennai, Thanjavur and Chidambaram. The users of FMCG products constituted the sample. The sampling method adopted for this study is categorized under Convenience Sampling Method.

DATA COLLECTION

The researcher visited the consumers personally for data collection. The time period was from April 2006 to September 2006. All the 190 consumers responded to the questionnaire. The response from the 190 respondents constituted the primary data for the current study. Secondary data were collected from ITC office in Coimbatore, ITC dealer office in Chennai, Thanjavur and Chidambaram and retailers in these three places.

DATA ANALYSIS METHODS

The statistical tools were used for the analysis of the data. These included Logistic Regression, Mann Whitney Test, and Kruskal Wallis Test.

THE CHOICE OF A CONSUMER

The results obtained from data analysis are presented in the following tables. As per the first objective, choices based on real life situations - such as brand awareness about the product (aware or unaware), quality of the product (quality or no quality) and price of the product (**low**: good price or **high**: bad price), which influences consumers to purchase the products, are to be studied unswervingly. Logistic Regression Technique was used to find out relevant choices which estimate significant amount of contribution to “*Response Variable Purchase*” of the Products. Response Variable Purchase denotes the consumers who purchase the *Aashirvaad atta*. “*Response Variable Purchase*” is considered as a dichotomous variable, since it exists in the “YES” or “NO” condition, and hence, the above mentioned choices are included as categorical independent variables and are presented in the following tables.

Table 2: Product: *Atta*

Dependent Variable Encoding	
Original Value	Internal Value
Not purchased	0
Purchased	1

Table 3: Estimates Of The Parameters In Logistic Regression Towards Brand Awareness And Quality For *Atta*

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	Brand Awareness	-5.945	1.065	31.186	1	.000	.003
	Constant	2.613	.312	69.960	1	.000	13.636
Step 2(b)	Brand Awareness	-5.826	1.095	28.306	1	.000	.003
	Quality	-1.835	.624	8.635	1	.003	.160
	Constant	3.257	.458	50.558	1	.000	25.972a

Table 4: Estimates Of The Parameters In Logistic Regression Towards Quality And Price For *Atta*

			Score	df	Sig.
Step 1	variables	Quality	10.575	1	.001
		Price	1.115	1	.291
	Overall Statistics		10.999	2	.004
Step 2	Variables	Price	.526	1	.468
	Overall Statistics		.526	1	.468

From Table 2 and Table 3, it is found that the purchase of *atta* is statistically significant ($P < 0.05$) with two out of three choices i.e., the brand awareness about *atta* and the quality of *atta*. It is shown that the brand awareness and quality of *atta* are explored as possible prognostic variables among the co-variates. It implies that the brand awareness and quality of *atta* play a significant role to predict the purchase of *atta*. This implies that the findings are unlikely to be due

to sampling fluctuations. The effect of the other variable, the price of *atta*, is statistically not significant ($P>0.05$) with the purchase of *atta*. It also means that the findings have no sufficient evidence that price is an influencing factor in the purchase of *atta*.

BRAND AWARENESS AND MEDIA ROLE

The aim of the study is to study about the brand awareness of *Aashirvaad atta (flour)*. To remove the possible effects of non-effective independent variables from this study, multiple logistic regression analysis technique was used. Brand Awareness is considered as a dependent variable. It is a dichotomous variable which exists in the condition of presence or absence. The independent variables such as media, age-group, gender, occupation and monthly income are included as co-variates. The value of the independent variables is given as score/rank, based on theoretical background under real life situations and measured on an ordinal/nominal scale.

Table 5 : Product: *Atta*

Dependent Variable (<i>atta</i>) Encoding	
Original Value	Internal Value
UNAWARE	0
AWARE	1

Table 6 : Estimates Of The Parameters In Logistic Regression Towards Media For *Atta*

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	MEDIA	.075	.018	16.350	1	.000	1.077
	Constant	.128	.395	.104	1	.747	1.136

Source: Field Survey

Table 7: Estimates Of The Parameter In Logistic Regression Towards Age, Gender, Occupation And Income For *Atta*

			Score	df	Sig.
Step 1	Variables	AGE	.861	1	.354
		GENDER	2.268	1	.132
		OCCUPATION	.011	1	.915
		INCOME	.108	1	.742
	Overall Statistics		4.207	4	.379

Source: Field Survey

Table 8: Estimates Of The Parameters In Logistic Regression Towards Media For *Atta*

Step Summary								
	Improvement			Model			Correct Class %	Variable
Step	Chi-square	df	Sig.	Chi-square	df	Sig.		
1	18.023	1	.000	18.023	1	.000	84.7%	IN: MEDIA

From Tables 4, 5 and 6, it is found that the brand awareness of *atta* among persons exposed to the media is statistically significant ($P<0.05$). It is shown that the media is explored as possible prognostic variable among the co- variates. It implies that the media has a significant role to predict the transformed value of the brand awareness of *atta*. The effects of other variables such as age group, gender, occupation and monthly income are removed from this study, since the brand awareness of *atta* is statistically not significant ($P>0.05$) with these variables. The relation between *atta* and the media advertisement such as TV, Tamil magazine, Business magazine, Shop display, Banners, Road shows is to be examined further.

Table 9: Mann-Whitney Media Value For *Atta*

Test Statistics						
	TVADV	TAMIL MAGAZINE	BUSINESS MAGAZINE	SHOP DISPLAY	BANNERS	ROAD SHOW
Mann-Whitney U	1672.000	2212.000	2333.000	2222.000	2189.500	2212.000
Wilcoxon W	2107.000	2647.000	15374.000	15263.000	2624.500	2647.000
Z	-2.822	-.962	-.013	-.705	-1.375	-.962
Asymp. Sig. (2-tailed)	.005	.336	.990	.481	.169	.336

From Table 7, it is found that the two independent samples (1) Individuals who are aware of *atta* and (2) Those who are unaware of *atta* have shown ($P < 0.05$) statistically significant difference with the TV advertisement among all the media. It indicates that individuals who watch TV advertisements have the Brand awareness of *atta*.

THE FACTORS THAT INFLUENCE CONSUMERS TO PURCHASE THE PRODUCTS

The aim is to recognize the factors like, taste, offer, availability, brand name, advertisement, package, which made the consumer to purchase the products. To start with, multiple logistic regression technique is used to make a relation between dependent variable '*purchase*' and independent variables by removing the probable effects of non-effective covariates from this study. Product purchase is considered as a dependent variable. It is a dichotomous variable, which exists in the presence or absence condition. The independent variables such as age-group, gender, occupation and monthly income are included as covariates.

Table 10 : Logistic Regression

Dependent Variable (<i>atta</i>) Encoding	
Original Value	Internal Value
NOTPURCHASE	0
PURCHASE	1

Table 11: Estimates Of The Parameter In Logistic Regression Towards Gender For *Atta*

Variables in the Equation							
Step 1		B	S.E.	Wald	df	Sig.	Exp(B)
	GENDER	1.145	.384	8.884	1	.003	3.143
	Constant	-.298	.553	.290	1	.590	.742

Table 12 : Estimates Of The Parameter In Logistic Regression Towards Age, Occupation And Income For *Atta*

Table 12: Variables not in the Equation					
Step 1	Variables		Score	df	Sig.
		AGE	.896	1	.344
		OCCUP	.082	1	.775
		INCOME	.075	1	.785
	Overall Statistics		1.714	3	.634

Table 13: Estimate Of The Parameter In Logistic Regression Towards Gender For *Atta*

Step Summary								
Step	Improvement			Model			Correct Class %	Variable
	Chi-square	df	Sig.	Chi-square	df	Sig.		
1	9.552	1	.002	9.552	1	.002	79.5%	IN: GENDER

From Tables 8, 9 and 10, it is found that the purchase of *atta* and gender is statistically significant ($P < 0.05$). It is shown that gender is explored as a possible prognostic variable among the covariates. It implies that gender has significant role to predict transformed value of purchase of *atta*. The effects of other variables such as age group, occupation and monthly income are removed from this part of the study since purchase of *atta* is statistically not significant ($P > 0.05$) with these variables. The significant difference between gender differences for purchasing factor of *atta* is to be examined further.

Table 14 : Mann Whitney Consumer Choice For *Atta*

Test Statistics						
<i>atta</i>	TASTE	OFFER	AVAILABI	BRANDNAM	ADVERTIS	PACKAGE
Mann-Whitney U	3875.000	4260.000	4480.000	4260.000	4330.000	4495.000
Wilcoxon W	7970.000	9310.000	8575.000	8355.000	8425.000	9545.000
Z	-2.114	-1.193	-.131	-.803	-1.291	-.075
Asymp. Sig. (2-tailed)	.035	.233	.896	.422	.197	.940

From Table 11, it is found that for two independent samples, one group is male and other group is female. These groups have shown ($P < 0.05$) statistically significant difference with the taste of *atta*. It may indicate that females who are using *atta* for cooking have preference to buy *atta* based on taste.

CONSUMER OPINION ABOUT PRODUCT QUALITY

The aim is to study the consumer's views about the quality of the products. Logistic Regression Technique is used to locate the predictor variables such as age-group, gender, occupation and income, which estimate the significant amount of contribution to response variable '*quality of the products*'. Response variable '*Quality of the products*' is a dichotomous variable, which exists in the 'YES' or 'NO' condition. The other variables such as the age-group, gender, occupation and monthly income are included as predictor variables.

Table 15 : *Atta*

Dependent Variable Encoding	
Original Value	Internal Value
NO QUALITY	0
QUALITY	1

Table 16 : Estimation Of Parameters In Logistic Regression Towards Gender For *Atta*

Variables in the Equation							
Step 1	B	S.E.	Wald	df	Sig.	Exp(B)	
	GENDER	1.282	.354	13.136	1	.000	3.605
	Constant	-.830	.515	2.597	1	.107	.436

Source: Field Survey

Table 17: Estimation Of Parameters In Logistic Regression Towards Age, Occupation And Income For *Atta*

Variables not in the Equation					
Step 1	Variables		Score	df	Sig.
		AGE	3.030	1	.082
		OCCUPATION	1.471	1	.225
		INCOME	.034	1	.853
	Overall Statistics		4.493	3	.213

Source: Field Survey

Table 18: Estimation Of Parameters In Logistic Regression Towards Gender For *Atta*

Step Summary								
	Improvement			Model			Correct Class %	Variable
Step	Chi-square	df	Sig.	Chi-square	df	Sig.		
1	14.180	1	.000	14.180	1	.000	73.7%	IN: GENDER

From Tables 12, 13 and 14, it is found that the quality of *atta* and gender is statistically significant ($P < 0.05$). It is shown that gender is located as possible prognostic variable among the predictors. It implies that the gender has a significant role to predict the transformed value of the quality of *atta*. The effects of other variables such as age group, occupation and monthly income are removed from this part of the study, since the quality of *atta* is statistically not significant ($P > 0.05$) with these variables. In this direction, consumer's views are shown using cross tabulation and clustered bar-chart.

FINDINGS AND SUGGESTIONS

FINDINGS

From the results obtained through data analysis, the following findings are compiled for *Aashirvaad atta*, which is produced by Indian Tobacco Company Ltd (ITC).

ATTA (FLOUR)

✿ The consumption of *atta* is 45 million tonnes in India, whereas, the branded segment contributes to only two per cent (www.itcportal.com).

✿ From the study, it is found that the people who purchase (74 per cent) *atta* are aware of the brand “*Aashirvaad*” and the company (ITC Ltd.) that produces it. Consumers of *atta* are giving more importance to the quality than the price, for the reason that *atta* is a food product.

✿ Media is playing a significant role in creating awareness for *atta*. TV is considered as the powerful media to create awareness.

✿ There is a significant difference between the opinion of male and female respondents towards the quality of *atta*. Respondents do not differ significantly in their opinion about the 'quality' aspect with respect to demographic factors such as age, income and occupation. The reason is that the quality of *atta* is judged by the women as they do cooking. Women prefer to buy *Aashirvaad atta* because of its taste. However, 14 per cent of the consumers were not satisfied with the quality of *atta* and they did not give any specific reason for their dissatisfaction. Brand switchover occurs from *Aashirvaad* to Pillsbury, because of its widespread availability.

✿ In spite of the fact that the price of *atta* in the branded segment is maintained steadily, 12 percent of the people had not used the product. Among the users, 61 per cent were satisfied with the price of *atta*. The product purchase decision is highly influenced by personal experience with the usage of the brand.

SUGGESTIONS

In this section, suggestions based on the findings are given.

✿ ITC can launch *Aashirvaad atta* in small packs with less price targeting the unorganized sector in the rural market.

✿ In India, the frequency of consumer promotion occurrence is the highest in the FMCG sector. Since ITC has more number of products in its portfolio, the company can give products like chocolates, biscuits and *agarbathies* (Incense sticks) as free samples along with *atta*. By doing this, the company is indirectly forcing the consumers to use their products, thus preventing them from buying competitive brands. The consumers may buy these products in future, if they are satisfied with the quality and other aspects.

✿ ITC should target the housewives through door to door canvassing to market *atta*. Sponsoring events like women's day and mother's day can also create awareness to the product. ITC can also target the restaurants and hotels to capture the market.

✿ Since *atta* is a food product, consumers attach more importance to the quality. ITC should communicate the consumers about the quality standards adhered in manufacturing the product. This will lead to the creation of a

positive image towards *Aashirvaad* in the consumers' mind.

ITC can follow informative advertising to create brand awareness for the *Aashirvaad* range of products like salt, chilly powder, ready to eat packaged foods etc.

BIBLIOGRAPHY

- 1) Aaker, David A., (1984) "Developing Business Strategies", New York: John Wiley & Sons.
- 2) Ansoff, H. Igor, (1979) "Strategic Management", London: The Macmillan Press Ltd.,
- 3) Arthur A. Thompson Jr, A.J. Strickland, John E Gamble and Arun K Jain, (2007), "Crafting and Executing Strategy", New Delhi, Tata McGraw Hill Publishing company limited.
- 4) Arunmozhi, R., S.B. Nageswara Rao, (2005), "Strategies Formulation for Demand Exceeding Supply Conditions", Management matters, Vol.1,(5), 98-100.
- 5) Azhar Kazmi, (1992) "Business policy", New Delhi, Tata McGraw Hill Publishing Company Limited.
- 6) Davis, K., (1975) "The Challenge of Business", New York, McGraw-Hill.
- 7) Jayashree Dubey and Rajni P. Patel (2006), "Small Wonders of the Indian Market". Journal of Consumer Behaviour, 14 (2), 145-151.
- 8) Nitin Mehrotra (2005), "Indian FMCG Industry, A Primer". The ICAI University press.
- 9) Preeta Hemang Vyas (2005), "Incentive Outlays Ratios in Fast Moving Consumer Goods Sector in India". Vikalpa, 30 (4), 98-105.
- 10) Ramaswamy, V.S. and Namakumari, S., (1995) "Marketing Management-Planning, Implementation and Control: The Indian Context", New Delhi, Macmillan India Ltd.,
- 11) The Hindu, Survey of Indian Industry, 2004.
- 12) The Hindu, Survey of Indian Industry, 2006.
- 13) The Hindu, The Business line, dated Nov.19, Friday, 2004.
- 14) The Hindu, The Business line, dated, Aug.5, Thursday, 2004, p.3.
- 15) www.allianceschool.ac.in/papers/marketing/mangeshbasamatkar.pdf
- 16) www.brandchannel.com/images/papers/297_brand_rejuvenation.pdf
- 17) www.iimahd.ernet.in/publications/data/2004-09-05oburai.pdf
- 18) www.iimahd.ernet.in/publications/data/2004priyajha-dang
- 19) www.itcportal.com