Research Paper   **Management**

A Study on the Purchasing Behaviour of Consumers towards Toothpaste with Special Reference to Madurai District, Tamilnadu

* Dr. S. Sriram ** Dr. S. Pugalanthi

* Faculty Member, Thiagarajar School of Management, Madurai

** Dy.Director, R L Institute of Management Studies, Madurai

ABSTRACT

Toothpaste Market is one of the most dynamic segments of the oral care market. The frequency of product launches in existing segments of the market and genesis of new product segments contributes to continuous evolution of the toothpaste market. Oral care market offers huge potential as penetration and per capita consumption of oral care product is very low in India. This study was addressed by Factor analysis to identify the important factors considered by the consumers for taking decision towards purchasing of Toothpaste and the study concluded that the Product Related factors like Colour, Ingredients, Brand name, taste, flavour etc, plays an important role in purchasing toothpaste. So the companies could analyze all these factors and find out the best suitable tools for promoting their toothpastes in India

Keywords : Tooth paste, consumer purchase behaviour, Oral care Industry, Factor analysis

1. INTRODUCTION:

A decision is the selection of an action from two or more alternative choices. Consumer decision to purchase the goods from the available alternative choice is known as "consumer purchase decision". The various options of the consumer may be classified into five main types of decisions. They are what to buy, how much to buy, where to buy, when to buy, how to buy. The participants in the buying decisions may be classified as the initiator, influencer, decider, buyer and users. The marketing people should initiate the participants in the purchase decision to make the purchases of the product at different marketing strategies. There are number of reasons why the study of consumer behavior developed as separate discipline. Marketers had long noted that consumer did not always act or react, as marketing theory would suggest.

The size of the consumer market in the country is vast and constantly expanding and Indian oral care industry is one among them.

Indian Oral Care Industry: Many people in India still clean their teeth with traditional products like Neem twigs, salt, ash, tobacco or other herbal ingredients. Average all India per capita consumption of toothpaste is a dismal 82gms.The dentist to population ratio is critically low 1:35,000 in the country. This results in low oral hygiene consciousness and widespread dental diseases.

Less than 15% of the Indian toothpaste users brush twice a day. Colgate and Hindustan Lever together account for over 85% of the organized toothpaste market. Red and Black toothpowder still accounts for 35% of the toothpowder market. In toothpowders, Colgate and Dabur are the leading players sharing between them 75% of the market

1.1. Toothpaste in Global Level

Toothpaste Market is one of the most dynamic segments of the oral care market. The frequency of product launches in existing segments of the market and genesis of new product segments contributes to continuous evolution of the toothpaste market. Increase in sales of oral hygiene products in major markets worldwide has largely resulted from growing awareness of hygiene and product innovation. Europe is the

largest toothpaste market in the world and is projected to be worth US$5 billion by the year 2012, as stated by Global Industry Analysts, Inc. Asia-Pacific represents the fastest growing toothpaste market globally and is projected to register a compounded annual growth rate of over 4% during 2001-2010 periods.

Numerous product launches in the oral care market in general, are expansions of recognized brands. Marketers realize that there is more demand for products that provide whitening and odour-fighting benefits. Taking advantage of recognized brand names is one strategy through which oral care marketers can bring innovative and novel products into the market.

1.2. Toothpaste in India

The toothpaste history in India can be tracked back from 1975 with 1200 tonnes of toothpaste produced by the toothpaste industry. Prior to the toothpastes Oral Hygiene was the domain of local homemade powders and ayurvedha practitioners. With the entry of Colgate in Indian marketplace the awareness about Oral care and the importance of oral care took-off. In recent years the Industry has shown impressive growth rate of 18.6% (this growth is calculated in terms of value growth in Rs.)

The growth in the urban market has been largely by the Gel Segment. Presently, a large chunk of the Market is still held by Colgate. The major players in the toothpaste Industry being Colgate Palmolive and Hindustan Lever Limited and several minor players like Balsara hygiene, Dabur etc.

Presently Colgate Dental Cream holds 52% of market share. HLL's Close up lies far behind with 23% of the existing market share. The third player in the marketplace in terms of market share is Colgate Gel with 10.5% of the market share. That leaves 14.5% market share for other Brands like Pepsodent, Pepsodent G, Promise, Babool, Sensofoam, Forhans, Cibaca, Neem, Vicco etc. The toothpaste market is presently valued at Rs. 750 crores out of which the Gel segment has already bagged 1/3rd portion of it. The Gel segment presently stands at Rs. 248 crores and is growing at a rate much faster than Cream. In India toothpaste usage as compared to other countries is very low which signifies about the potential of the

market. In Urban India the usage of toothpaste per person per year is just 190gms. Where as it is 200gms of toothpaste per person per year in developing countries as Indonesia and Thailand. In developed countries as USA and other European countries the toothpaste usage is 375 gms per person year. In India the toothpastes companies are going in for advertising on a heavy note, on an average the companies managing this FMCG category are spending 6.15% of their sales on development. Colgate Palmolive had shelled out 15% of their sales on ads in the year 1994. Dabur had an ad expenditure of 5.07% for the year 1993, whereas Balsara Hygiene spend a huge 10.17% of their sales.

Industry Overview in India

Total Market of 750 Crores
Growth Rate of 18.6%
Percapita usage mere 85 gms per person
Major Player – Colgate Palmolive and Hindustan Unilever

1.3. SWOT Analysis of Toothpaste Industry
Strengths
* Low Operational Costs
* Presence of well known brands
* Presence of established distribution network

Weakness
* Low export Level
* Low scope of investing in technology and achieving economies of scale
* Me too products which illegally depicts the label of established brands

Opportunities
* Untapped Rural market
* Purchasing power increase
* People being aware of dental health
* Penetration level increased with Cable T.v, Internet and F.M Radio Stations.

Threats
* Still well established competitors
* Threat of substitutes.

2. OBJECTIVES OF THE STUDY:
The objectives of the study are
1. To study about the Tooth paste Market
2. To examine the factors influencing the purchase of tooth paste
3. To examine how the product attributes influencing the consumer in buying toothpaste

3. SCOPE OF THE STUDY:
The study covers the attitude of the factors influencing the purchase of tooth paste.

4. RESEARCH DESIGN AND METHODS:
Research design is a detailed blue print used to guide the research study towards its objectives. In this study the researchers used descriptive design. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection (Glass & Hopkins, 1984). It often uses visual aids such as graphs and charts to aid the reader in understanding the data distribution. Area random Sampling method was used to select the respondents.

4.1 Sample Size:
Sample is the fraction of the population; sampling is a technique or a method of selection of samples. The researcher in carrying out this research adopted the most appropriate sampling technique for research that is the simple random technique. The Universe of the study is based on Madurai District. Since the population size is infinite, sample size for the study was taken as 200 respondents. Madurai District was divided

into 5 geographical areas like North, South, East, West and centre as Madurai city. From each area 40 respondents were selected at random to make it as 200.

4.2. Method adopted for communication:
Personal interview is the method of contact used with the respondents. Personal interviewing method is used because sample size is relatively small and interviewer can ask more questions.

4.3. Sources and data collection:
The research consists of the application Primary data. Primary data was collected by administering questionnaire to the respondents. The secondary data was collected through websites and from various journals and magazines. The collected data was analyzed by using the statistical tools like tables, charts, Factor analysis

5. ANALYSIS & DISCUSSIONS:
(Table No:5.1)-General Profile of the investors

Factors	Classification	No. of respondents	Percentage
Gender	Male	128	64
	Female	72	36
Age	Less than 35	96	48
	36-50	48	24
	51-65	32	16
	Above 65	24	12
Educational Qualification	Schooling	4	2
	Diploma	36	18
	U.G	96	48
	P.G	52	26
	Mphil/P.hd	12	6
Occupation	Business	64	32
	Private employee	48	24
	Retired	28	14
	Housewife	48	24
	Government employee	12	6
Income range	Less than 100000	64	32
	100001-300000	92	46
	300001-500000	32	16
	Above 500000	12	6

5.2. Factor Analysis:
For sampling, the researcher had used 20 pre selected statements [based on the situation analysis] rated using 5 point Likert scale, for identifying the preference allotted to each statements. Factor analysis [SPPS Software] applied to determine the significant factors.

From the above mentioned table it's clear and loud that all the respondent are well qualified and experienced to identify and express their views about, factors assisting for leveraging micro finance.

To get an idea of prominent factors, which influences the purchase of tooth paste, 20 pre-decided statements have been used to find out the preference level of the respondents on five point Likert scales and the same were subjected to factor analysis. Before the application of factor analysis the following five techniques were also used for the analysis of data:

5.2.1] Correlation matrix: the correlation matrices was computed and examined. Correlation matrix was constructed using primary data. The correlation matrix revealed that there is a strong positive correlation between the statements no.1, 16 & 20. These statements were considered appropriate for factor analysis procedure.

5.2.2] Kaiser-meyer-olkin measure of sampling adequacy [MSA]:

MSA focuses on the diagonal elements of partial correlation matrix. From the analysis, it is clear that all of the diagonal elements of partial correlation matrix were sufficiently high for factor analysis. The diagonal elements of Partial Correlation Matrix from statement 1 to 20 are as follows : 0.803,0.676,0.643,0.407,0.622,0.618,0.707,0.568,0.650,0.450,0.317,0.650 ,0.703,0.645,0.599,0.773,0.547,0.516,0.620 and 0.568.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.60
Bartlett's Test of Sphericity	Approx. Chi-Square	1136.94
	df	190
	Sig.	0

5.2.3] Test the Sampling Adequacy: Test of Sampling Adequacy was then performed sum of the values of diagonal elements of partial correlation matrix from statement number 1 to 20 0.803+0.676+0.643+0.407+0.622+0.618+0.707+0.568+0.650+0.450+0.317+0.650+0.703+0.645+0.599+0.773+0.547+0.516+0.620+0.568)/23 was .680. This shows that statement is good enough for sampling

5.2.4] Bartlett's Test Of Sphericity [BTS]: Bartlett's Test Of Sphericity [table no.3] was also conducted to check the overall significance of the correlation matrices. The value of Kaiser-Meyer-Olkin measure of sampling adequacy is 0.680. The test value of BTS was significant and it is indicating that correlation matrix is not an identity matrix. A scree plot is a plot of the Eigen values against the number of factors in order of extraction of 4 factors came out from the 20 variables of Scree plot, whose Eigen value is greater than 1 but for this study the researcher got only 4 factors. The shape of the plot is used to determine the number of factors. The plot has a distinct break between the steep slope of factors, with large Eigen values and a gradual trailing off associated with the rest of the factors.

Figure 1: Scree Plot
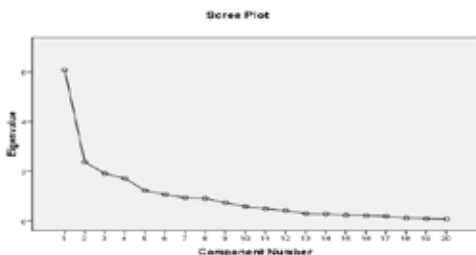
5.2.5] **Principal component analysis: un-rotated factor matrix**
Principal component analysis was performed to extract the factors with un-rotated factor matrix ref annexure. 4 factors came out of 20 statements related to Product related factors, package related factors, Benefits related Factors and Reference related Factors and 0.833 is a factor loading and it indicates correlation between statement no.1 and factor-1. Similarly other factors also correlated.

5.2.6] Explanation of Variance: Total variance has been explained by table no.5.2.7. In the present research the researcher selected three Eigen values of factor-1 calculated through sum of square factor loading of statements number 1 to 20 was 6.080 Similarly Eigen value factor 2, 3 and factor 4 were found to be 2.378,1.910 and 1.714 respectively after this variance for factor -1, 2 ,3 and 4 was found to be 30.402,11.891,9.549 and 8.569.This percentage of total variance used as an index to determine how well the total factor solution accounts as a percentage of total variation for factors influencing the tooth paste purchase was found to be 60.411% It was a pretty good bargain , because the researchers were able to economize on the number of variable (from 20 state-

ment , the researcher reduced them 4 underlying factors) , While researcher lost only 39.581% of the information. Four factors extracted from 20 statements were retained.

5.2.7] **Principal component analysis: varimax rotation matrix**
Principal component analysis with varimax rotation matrix has been applied. It's clear from the matrix that the factor loading is different from un-rotated matrix, but the commonalties are the same. In this case, statement no 1, 2, 7, 15 and 16 have high positive correlations for factor 1. The statement numbers 3,6,8,12,15 and 18 have high positive correlations for factor 2. The statement numbers 9,10,11,13 have high positive correlations for factor 3. The statement numbers 4, 5 and 14 have high positive correlations for factor 4 and also can be clubbed in as Single factors.

5.2.8] **Explanation of variance**
Total variance has been explained by table 2.

Table 2: Explanation of Variance

Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
6.080	30.402	30.402	4,242	21.211	21.211
2.378	11.891	42.293	2.913	14.565	35.776
1.910	9.549	51.843	2.841	14.204	49.980
1.714	8.569	60.411	2.086	10.432	60.411

Total variance is explained with rotation, the Eigen values are different for factor 1, 2, 3 and 4 in comparison to previous un rotated matrix. The Eigen values for factor 1, 2, 3 and 4 are 4.242, 2.913, 2.841 and 2.086 respectively. Percentages of variance for factor-1, 2, 3 & 4 are 21.211, 14.585, 14.204 and 10.432 respectively. It indicates that four factors extracted from 20 statements have cumulative percentages up to 60.411% of the total variance. This is a pretty good bargain, because the researchers were able to economize on the number of variable [from 20 statements, the statements were reduced into 4 underlying factors]

Table:3 Rotated Component Matrix[a]

S.NO		Component			
		1	2	3	4
1	INGREDIENT	.746	.120	.268	
2	COLOUR	.716	-.253	.309	
3	MOUTH SIZE	.176	.692	.492	-.146
4	IDA RECOMMENDED	-.201	.122		.679
5	DENTIST RECOM		.407	.126	.661
6	CAP PATTERN	.350	.650		
7	FLAVOUR	.597	.283	.325	.276
8	SIZE	.281	.570		-.437
9	WHITENING	.103		.794	-.243
10	MOUTH FRESHNER	.188	.170	.763	
11	PROBLEMS	.298	.202	.717	
12	OFFERS		.566	.279	.226
13	FORM	.145	.115	.820	
14	FRIENDS/RELATIVES	.166		.136	.722
15	BRAND NAME	.638	,515		-.360
16	TASTE	.578	.484		.229
17	PRICE	.284	.108	.349	-.321
18	PACKAGE	-.117	.757	.175	.181
19	EASY TO BUY		.223		-.590
20	CAP	.419	.549	.292	

5.2.9. **Naming of Factors**
After a factor solution has been obtained, in which all variables have a significant loading on a factor, the researchers attempted to assign some meaning to the pattern of factor loadings. Variables with higher loadings are considered more important and have greater influence on the name or label

selected to represent a factor. Researchers examined all the underlined variables for a particular factor and placed greater emphasis on those variables with higher loadings to assign a name or label to a factor that accurately reflected the variables loading on that factor. The names /labels are derived by the factor analyst intuitively based on its appropriateness for representing the underlying dimension of a particular factor. All three factors have been given appropriate names on the basis of the variables represented in each case.

Factor -1: Product related factors: This is an important factor which explained 30.402% of the variation. the statements as "Ingredients "(.746), "Colour ", (.716) , " Flavour ", (.597) " Brand Name" (.638) and "taste" (0.578)are highly correlated with each other . These statements reflect product aspects for influencing the toothpaste purchase; hence, the researcher names this segment as Product related factors.

Factor-2: Package related factors: The second kind of factor explained 11.891% of the variances. In this segment, the researcher look the three important variables such as " Product Mouth size", (.692), "Cap pattern",(0.650), "Size",(.570), "Offers",(.566), "Brand Name"(.515) and "package" (0.757). These statements reflect package related factors for influencing the toothpaste purchase.

Factor 3: Benefits related factors: This factor explained 9.549 % of the variations. Attributes like "Whitening" (.0.794), "Mouth freshener", (.7623, "sensitivity problems", (.757), show the benefits related factors for influencing the toothpaste purchase.

Factor 4: Reference factors: This factor explained 8.569% of the variations. "Friends/Relatives" (.722), "Dentist Recommendation", (.661), "IDA Recommendation", (.679), these statements show the reference related factors for influencing the toothpaste purchase.

Based on Factor Analysis, product related factors plays an important role in influencing tooth paste purchase followed by package related factors, benefits related factors and reference factors.
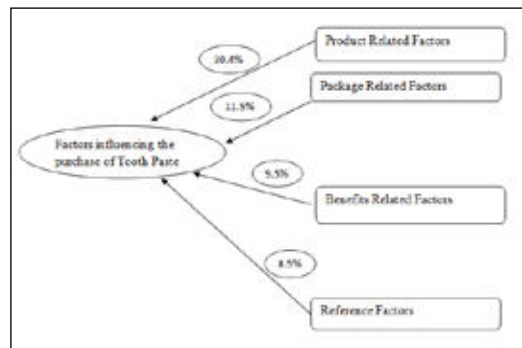
6. CONCLUSION AND RECOMMENDATION

Consumer behavior cannot be exactly predicted; fairly it is predicted with the help of research activity. Starting and ending of the survey ends with only one statement 'consumer is king' .Oral care market offers huge potential as penetration and per capita consumption of oral care product is very low in India. However, rising per capita income and increasing awareness is driving demand of oral care products, the dentist population is also low in India. For promoting the product consumption and creating awareness government has taken initiative like dental health camps, Manufactures have used advertising campaigns to promote higher consumption of toothpaste. Creating the awareness is a part of social responsibility of the company.

There are some important factors considered by the consumer for decision making. Colour, Ingredients, Brand image and advertising, play an important role in purchasing toothpaste, sometimes based on the offer the consumer compare with competitor product and select the best one. Product attribute also analyzed by the consumer for deciding a brand. So the companies could analyze all these factors and find out the best suitable tools for promoting their toothpastes in India

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