

A Study of Demographic Variables Affecting Consumer Buying Behaviour with Reference to Synthetic Detergents

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ABSTRACT

The research attempts to study the consumer buying behaviour of synthetic detergents in an Indian setting, specifically with reference to southern West Bengal. In this paper, the impact of a few demographic variables on consumer buying pattern has been established. A few non-demographic variables have also been considered to test the association between demographic and non-demographic variables which are involved in consumer buying behaviour of synthetic detergents. The study was conducted in both urban and sub-urban areas of southern West Bengal during the time period from 2011-2012. Results indicate that there is an association / relationship between the demographic variables and non-demographic variables of the consumers, and the FMCG companies in India should pay more attention towards the demographic characteristics of their target consumers. Demography has traditionally helped the marketers to evolve positioning strategies and people having common demographic characteristics behave in an identical manner and will have the same preferences. This study also attempts to contribute to the knowledge of how FMCG companies will be able to understand the buying preferences of the consumers.

Keywords : consumer behaviour, synthetic detergent, demographic variables, FMCGs

Consumer Behaviour is the decision process and physical activity individuals engage in when evaluating, acquiring, using, or disposing of goods and services. Three classes of variables are involved in understanding consumer behaviour: Stimulus, Response and Intervening variables. Stimulus variables, existing in both the individual's external and internal environment, generate the sensory inputs for the consumers. Response variables are the resulting mental and/ or physical reactions of the individuals who are influenced by stimulus variables. For example, purchasing a product or forming attitudes about it could be viewed as response variables. Intervening variables literally intervene between the stimulus and response variables. These variables are internal to the individuals and can include values, mood, knowledge, and so on, as well as attitudes (Loudon & Bitta, 2002). From the stand point of consumer behaviour, informal social or friendship groups are generally more important for the marketer, since their less clearly defined structure provides a more conducive environment for the exchange of information and influence about consumption-related matters (Schiffman & Kanuk, 1998).

Generally, detergents are surface-active agents. Four groups of detergents are distinguished:

- 1) Anionic
- 2) Cationic
- 3) Nonionic
- 4) Ampholytic or Amphoteric detergents

The present study was conducted with reference to Synthetic Detergents, which are an anionic detergent. The first detergent or surface-active agent was soap. Soap has been known for at-least 2300 years. The first synthetic detergents for general use, however, were produced by the Germans during the first world war period. With the foresight of Dr. Vikram Sarabhai, the first synthetic detergent plant was installed at Wadala in Bombay at Swastic Oil Mills in 1957. Introduction of synthetic detergents or say bringing detergents to India incurred a huge cost for Sarabhai (Khanpara, 2000).

Synthetic detergents occupy a vital place in modern chemical science. Their development is, in fact, linked with the growth of the petrochemical industry, which provides the basic raw material for manufacturing detergents. This industry made a phenomenal progress only after the second world war. In households, synthetic detergents are used in the powdered form, mostly for washing clothes, linen and other textiles. The textile industry is one of the largest consumers of synthetic detergents. Synthetic detergents are preferred over soaps on ground of economics and

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efficiency. Unlike soaps, synthetic detergents remain unaffected by the presence of naturally-occurring lime and magnesium salts and maintain their cleansing potentialities with practically no wastage. In the last decade (1990-2000), the increase in demand of synthetic detergents was 16,00,000 M.T. In the year 2000, market demand for synthetic detergents in India was 30,00,000 M.T. and in West Bengal, it was nearly 1,60,000 M.T. worth ₹ 370 crores.

An individual customer's age, sex, marital status, income, occupation and geographic location also affect his or her consumption pattern. In fact, demography has traditionally helped the marketer evolve positioning strategies. The assumption here is that people having common demographic characteristics behave in an identical manner and will have the same preferences. The commonly used basis for market segmentation are the demographic characteristics. Factors like age, education, income, occupation, sex, family size and marital status are used singly or in combination to segment the market (Saxena, 2003). A customized strategy to attract male out-shoppers should include addressing the issue of time and money expenditures involved in out-shopping activities (Engel, Blackwell, & Miniard, 1990).

Synthetic Detergent is a cleaning product, where self-image/product-image congruence is found. The product consumers use to communicate themselves to others act as symbols. Such communicative products have three characteristics. First, they must have visibility in use, such that their purchase, consumption and / or disposition are readily apparent to others. Second, the product must show variability - that is; some consumers must have the resources to own the product while others do not have the time or financial resources to possess it. Third, the product should have personalizability. Personalizability refers to the extent to which a product denotes a stereotypical image of the average user (Mowen, 1995). The consumption of synthetic detergents has been increasing globally, and in India also, the consumption has been rising enormously. In U.S., the \$4.3 billion soaps and detergents market is characterized by slow steady movement. It was growing by 4-5% per year (Walsh, 1998).

Hindustan Lever occupied 60% of the market share followed by Procter & Gamble, Nirma and other companies. The Government of West Bengal started marketing a brand of synthetic detergent, named Websi and New Websi from the financial year 1995-96 through the public distribution system. Its market share is only 1.5 - 2%, which is controlled by West Bengal Small Industries Development Corporation Limited. Some local manufacturers in Howrah and Kolkata are the main suppliers of this kind of synthetic detergent. Strategically important differences between male and female out-shoppers were found relating to attitudes towards out-shopping and local merchants and demographic variables. Highest per-capita consumption of detergents in the last decade was found in Mexico with 11.6 kg and the lowest was found in India with 2.8 kg. Pakistan was ahead of India with 3 kg consumption rate, USA and UK recorded 9.2 kg and 10.3 kg consumption rate respectively. Asian countries have less per-capita consumption of synthetic detergent than the Western countries. Per capita consumption of synthetic detergent in the last decade for different countries is shown in the Table 1.

Table 1 : Per Capita Consumption of Synthetic Detergents			
Country	Quantity (in kg)	Country	Quantity (in kg)
India	2.8	Spain	9.2
Pakistan	3.0	Sweden	10.8
Philippines	4.3	South Africa	6.3
Japan	5.9	Turkey	4.2
Korea	4.6	U.K.	10.3
Mexico	11.6	U.S.A.	9.2
New Zealand	10.6	Vietnam	4.0
Source: C.B. Khanpara (2000). "Synthetic Detergent and Industry." 1st Edn., Vikas Publishing House, Kolkata			

World average of per-capita consumption of synthetic detergent is 4.4 kg (Khanpara, 2000). All the 'biggies' in the Indian fast-moving consumer goods (FMCG) industry - Hindustan Level Limited (HLL), Marico, Procter & Gamble, Colgate - Palmolive, Nestle or Britannia, no longer have enough customers in their original targeted segments to continue enjoying high growth in sales and profits. They are continuously adding products to their baskets of product offerings; however, this in turn is leading to heavy competition in the marketplace. The realization that the addition of new products alone is not enough to sustain growth brought about the need to widen the customer base, by converting

occasional users to frequent users and non-users to occasional users. Until recently, most FMCG companies were following a 'market-skimming' strategy, targeting the upper segment of the society, mainly in urban areas. Although such companies have been offering products with different brand names to the lower segments, such as semi-urban and rural people, the lower prices in these segments resulted in temporarily lower profits.

LITERATURE REVIEW

FMCG goods are the goods that are generally used within a short span of time of days, weeks, or months, and within one year. FMCGs have a short life, either as a result of high consumer demand, or because the product deteriorates rapidly after a certain amount of time. Purchasing of FMCG products involves many buying behavior patterns. These patterns help to identify the consumers' perception. Better understanding of consumer perception towards FMCG products will bring in greater profits for the supermarkets (Subburaj, 2012).

Kumar (2006) identified that a majority of the rural consumers give more preference to the quality of the product in his research at rural India, which showed that all the FMCG companies give more emphasis on quality standards of the product. He also identified that the income level of the rural consumer is increasing, which also generates more consumption and purchasing power for the consumers.

Akber and Pervez (2009) concluded that trust and customer satisfaction have significant and positive relationship with customer loyalty. Similarly, Haq and Amin (2009) found that customer satisfaction is the most important driver in order to enhance customer loyalty. Furthermore, Akbar and Parvez (2009) defined customer satisfaction as a reaction which resulted from a method of assessing what has been received against what was expected, including needs and wants related with the purchase and purchase decision itself. Another study suggested that customer satisfaction and loyalty are positively related to each other. It is also suggested that customer preservation rate, market share and profits can be improved through boosting up the satisfaction level of the customers (Ponirin, Scott, & Heidt, 2009).

HYPOTHESIS

The demographic variables have an impact on the buying patterns of the consumers with reference to synthetic detergents.

METHODOLOGY

The data were collected directly from the field of survey. In this case, the jurisdiction of the study was Southern West Bengal comprising of seven districts namely Kolkata, 24-Parganas (N), 24-Parganas (S), Nadia, Hooghly, Howrah and Midnapore. Kolkata was considered as the urban market and the remaining six districts were considered as the sub-urban market. For both the cases, the data were collected from inside the market as well as from outside the market.

❖ **Time Frame of the Study :** The study was conducted in both urban and sub-urban areas of Southern West Bengal during the time period from 2011 - 2012.

❖ **Sample :** A representative sample of 450 respondents were chosen following the method of stratified random sampling. The sample size for the urban market was 150 respondents and for the sub-urban markets, it was 300 respondents. In case of the urban market, the responses were collected from the corporation enlisted urban markets. In case of the sub-urban markets, the samples were collected from the markets belonging to the important stations as well as to the relatively not so important stations.

❖ **Tools :**

a) Five demographic variables of the consumers were considered namely - Family size, Age group, Income group, Educational level and Occupational category. Similarly, three non - demographic variables were also considered - namely Frequency of purchase, Size of consumer pack purchased and Consumption expenditure of the consumers.

b) The method to collect data in this case was the personal interview method. The tool used to collect the data was undisguised structured questionnaire.

c) Nominal scale was used to capture the data for this study. Data were also picked on the interval scale and treated on the nominal scale.

❖ **Procedure :** Five demographic and three non-demographic variables were considered in showing relationships between demographic and non-demographic variables. After collecting the data, cross tabulations were computed through tables showing relationship between demographic and non-demographic variables. From the quantitative perspective, a non - parametric technique like the chi-square test was used. The chi-square test was conducted with a 5% level of significance showing associations of:

- i) Family size, Age group, Income group, Educational level and Occupational category to Frequency of purchase.
- ii) Family size, Age group, Income group, Educational level and Occupational category to Size of consumer pack purchased.
- iii) Family size, Age group, Income group, Educational level and Occupational category to consumption expenditure.

Wherever the calculated chi-square values are greater than the table value, the hypothesis is accepted and there is an association between the demographic and non-demographic variables. But the cases where calculated chi-square values are less than the table value, the hypothesis is not accepted and there is no association between demographic and non demographic variables. The cells of the demographic variables have been clubbed, and are presented in the Table 2. The table value of chi-square with 3 degrees of freedom at 5% level of significance is 7.815.

❖ **Limitation of the Study :** The study was limited to the districts of the Southern part of West Bengal. So, the results obtained are based on the responses of the respondents residing in this particular geographic region.

Table 2 : Demographic Variables (Clubbed)	
Demographic Variables	Cells Clubbed
Family Size	One adult and two adults, and two adults and child / children
	More than two adults; more than two adults and child, and more than two adults and children
Age Group	1 - 20.5 years and 20.6 - 40.5 years
	40.6 - 60.5 years and more than 60.5 years.
Income Group	Less than ₹ 5000 p.m. and ₹ 5000 - ₹ 10, 000 p.m.
	More than ₹ 10,000 - ₹ 15000 p.m. and more than ₹ 15000 p.m.
Educational Level	Below Class 8 and Class 8 - Class 12
	Above Class 12 - Graduate and Postgraduate and above
Occupational Category	Business and Others
	Service and Professionals
Source : Primary data	

RESULTS AND DISCUSSION

The Table 3 presents a macro picture of the associations existing between demographic variables (family size, age group, income group, educational level and occupational category) and non-demographic variables (frequency of purchase, size of consumer pack purchased and consumption expenditure) with reference to urban and sub-urban markets (consolidated). All the associations existing between demographic and non-demographic variables had been found.

The Table 4 presents a micro picture of the associations existing between demographic variables and non-demographic variables, which had been drawn separately for the urban markets (consolidated). All the associations existing between demographic and non-demographic variables were found. The Table 5 presents another micro picture of the associations existing between demographic variables and non-demographic variables, that were drawn separately for the sub-urban markets (consolidated). All associations existing between demographic and non-demographic variables were found.

From the results, it is evident that consumers' purchase behaviour in both macro and micro levels was influenced by their demographic variables. The associations/relationships between demographic and non - demographic variables,

Table 3 : Tabular Presentation of 'Chi-square' Values Of Urban and Sub-urban Markets (Consolidated) Showing the Association between Demographic and Non-Demographic Variables			
Demographic Variables	Non-Demographic Variables		
	Frequency of Purchase	Size of Consumer Pack	Consumption Expenditure
Family Size	8.986	35.112	38.225
Age Group	13.892	24.22	65.502
Income Group	45.948	43.142	74.376
Educational Level	78.348	50.734	13.459
Occupational Category	47.576	19.442	52.565
Source: Primary Data			

Table 4 : Tabular Presentation Of 'Chi-square' Values Of Urban Markets (Consolidated) Showing the Association between Demographic and Non-Demographic Variables			
Demographic Variables	Non-Demographic Variables		
	Frequency of Purchase	Size of Consumer Pack	Consumption Expenditure
Family Size	9.175	20.162	22.924
Age Group	10.895	27.835	25.121
Income Group	17.124	17.021	25.551
Educational Level	22.141	16.871	8.027
Occupational Category	18.76	23.249	14.731
Source: Primary Data			

Table 5 : Tabular Presentation of 'Chi-square' Values of Sub-urban Markets (Consolidated) Showing the Association between Demographic and Non-Demographic Variables			
Demographic Variables	Non-demographic Variables		
	Frequency of Purchase	Size of Consumer Pack	Consumption Expenditure
Family Size	13.736	34.812	43.444
Age Group	9.485	56.206	48.411
Income Group	47.067	34.827	48.624
Educational Level	66.792	35.971	8.868
Occupational Category	36.93	9.663	44.784
Source: Primary Data			

found in the three tables (Tables 3, 4, and 5) are in conformity with the findings of Slama and Tashchian (1985), who confirmed that purchase involvement and search behaviour are linked to several demographic characteristics of the consumers and their households. However, Thomas and Garland (1993) concluded that consumers' search activity takes place outside the store, and their purchase behaviour is planned. Incidentally, their research also found out that this search behaviour and consumer behaviour do vary significantly by educational level, employment status and age group. The consolidated Tables 3,4, and 5 - by taking both urban and sub-urban markets - fall in line with the findings of Salma and Tashchain and Thomas and Garland.

The findings of this study also fall in line with the findings of Subburaj (2012), who ascertained the association between the product purchased and the cherry picking variables like price of the product, emotional attachment with the product and schemes given to the consumers along with the product.

Another study by Ponirin, Scott, and Heidt (2009) suggested that customer satisfaction and loyalty are positively related to each other. It was also suggested that customer preservation rate, market share and profits can be improved by boosting up the satisfaction level of the customers.

CONCLUSION

From the results and the subsequent discussion, it can be concluded that the demographic variables do have an impact on the buying patterns of the consumers with reference to synthetic detergents. Research conducted on consumer buying behavior for FMCGs by Subburaj (2012) confirmed the association between the product purchased and the variables like price of the product, emotional attachment with the product and schemes/offers given to the consumers along with the product. Several research works of the above type have been carried out so far. But no research study exclusively considered the demographic variables of the consumers and the impact of these variables on the purchasing pattern. This study exclusively shows the relationship 'or' association between the demographic and non-demographic variables which are involved in consumer buying behavior for FMCGs.

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