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Buying Behaviour of Women for Personal Care Products in Coimbatore District

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Abstract:

The Indian economy, is growing briskly at an annual rate of above eight percent during 2008-11.. Despite the worldwide economic slump, the market for personal care products in India is growing at 13 percent per annum. The personal care industry is directly aligned to the demographics of the region that it serves. With the median age at 25 years, India is among the world's youngest nations, in addition, the country's population base of 1.2 billion persons is estimated to rise to 1.5 billion by the end of 2030. Urbanization will also increase by 45 percent in the next 30 years. In recent times, Indian consumers are looking for newer shopping experiences and products. It is quite evident that the cosmetics and toiletries industry in the developed markets is close to saturation and growth has slowed down. The cost of cosmetics, soaps and detergents will go up due to the high raw material prices after the drastic depreciation of the rupee, making imports expensive. Meanwhile, countries such as India, with its growing economy, offer a lucrative market for large multinationals.

Keywords: Loyalty, Buying behaviour, Personal care products, Brand

1. The Personal Care Industry

The Indian personal care industry has seen a magical metamorphosis, as far as some of the revolutionary concepts are concerned with regard to the consumption pattern among the women consumers and also in terms of product innovation. While the level of disposable income determines the overall sector growth, the market has already been segmented and sub-segmented. Companies have launched products at a number of price points to drive up volumes. New products are being launched in niche segments, and old products re-launched. Brand equity drives the customer's purchase decisions, and is the key to gaining market share. Also, competitive pressures have hiked the advertising budgets of most players and a profusion of promotional schemes are being offered to maintain top line growth. Bearing in mind the importance of the "new Indian women" as consumers, the players in the personal care segment are concentrating on formulating promotional programmes in goading the women consumers from the knowledge level to the adoption level. The response of customers of personal care products to these market stimuli is their buying behavior.

2. Need for the Study

The Indian personal care for products will witness 25 percent growth rate in the next few years. The Emerging Market Forum perceives that the per capita income of India is expected to increase about 18 times by 2039, while disposable income for households is estimated to grow three times by 2025. Globalization, rise in income, greater awareness about self needs and a change in consumption patterns of households are the accelerating factors behind this rapid growth. Current per capita expenditure on cosmetics are about USD 1, compared to USD 36.65 in the other Asian countries.

This low market penetration in India for personal care products offers an immense opportunity. India's B and C class towns have mass-market product users and are yet to see a much focused approach from vendors. This is a segment that presents a big opportunity for brands both national and international. Further, there is a huge scope for international and national Spa chains as most of the spas are concentrated in the Southern part of the country. The second big opportunity is that some major European retailers are looking for distributors and third-party manufacturers to set up joint ventures in the country.

Infact, after China, India is being seen as a strong manufacturing hub and a good source for natural ingredients. The country's personal care product sector is characterized by high volumes and low prices of cosmetic products. The ultimate winners would be those that ensure better value offerings to meet the needs of the Indian consumers.

The personal care industry has seen a magical metamorphosis, as far as some of the revolutionary concepts are concerned with regard to the consumption pattern among the women consumers and also in terms of product innovation. Low margins of profit and high volumes of sales characterize the industry. While the level of disposable income determines the overall sector growth, the market has already been segmented and sub-segmented. Companies have launched products at a number of price points to drive up volumes. New products are being launched in the niche segments, and old products re-launched. Brand equity drives the customer's purchase

decisions, and is the key to gaining market share. Also, competitive pressures have hiked the advertising budgets of most players and a profusion of promotional schemes are being offered to maintain top line growth. Bearing in mind the importance of the “new Indian women “as consumers, the players in the personal care segment are concentrating on formulating promotional programmes in goading the women consumers from the knowledge level to the adoption level. The response of customers of personal care products to these market stimuli is their buying behavior. Therefore a study of buying behavior of customers is useful to the marketers to plan their production and promotional efforts. This is the purpose of this study. It is focused on women and five product groups viz., (i) oral care, (ii) skin care, (iii) hair care, (iv) beauty care and (v) health care. Marketing mix modeling, forecasting, price driver reporting and various other econometric techniques are used in the processing of vast volumes of data to produce much insights in support of strategic and tactical decisions. They have provided the basic underpinning of “go to market” strategies for promotions and pricing strategy during the last decade and a half.

However, such a traditional analysis of “past events” limits its impact in a situation which is proving unique to most modern marketers and category managers.

The fundamental challenge to be faced today revolves around recognizing the need to use more focused and speedy methods of analysis to support brands, as a part of a holistic organizational approach, rather than purely as a function of marketing, sales or, in the context of retail, the buying department. Hence it is essential to revisit current thinking on promotional planning and measurement and highlight the increasing need for manufacturers, retailers and third party insight providers to work more co-operatively on promotional strategy and tactics. This is the purpose of the study.

3. Problem Statement

The woman’s influence on the buying pattern has grown significantly in the last few years as literacy level is on the rise. The increased penetration of satellite and cable television has made women more aware of what is on offer in the market place. Because of the rise in literacy levels, the number of economically independent women is also steadily moving up. This means a rise in the proportion of double income families.

Not only are women increasingly influencing buying decisions they are also turning out to be one of the fastest growing consumer categories. Realizing the intense competition that is faced from both domestic suppliers and MNCs and also from cheaper imports, which are increasingly visible in urban markets, a number of companies are spending huge investments in promoting their brands and to retain and improve their share of the pie. How do women respond to them in terms of their choice and spending on the products? Are there special needs to serve rural women? The study concentrates to find answers to these questions.

4. Objectives

- i. To determine and study the response of urban and rural women in the use of personal care products
- ii. To determine the factors motivating women to buy the specific brands of personal care products
- iii. Suggest strategies for the effective selling of personal care products.

5. Research Method

All the women buying personal care products in the study area - Coimbatore city and its sub-urban areas, in Coimbatore district constituted the Universe for the study. Simple random sampling method was used.

In the first stage, a sample of 100 sellers of the personal care product was selected. 400 regular women buyers of personal care products were identified and listed: 200 buyers in the city and 200 buyers in the sub-urban areas. In the second stage, by applying random sampling technique to the lists of sellers and women buyers of the personal care products, the required samples of buyers in the city and the buyers in the sub-urban areas were selected. The ultimate sample for the study consisted of 100 women buyers in the city and 100 women buyers in sub-urban areas. As all the sample (100) women finally selected from sub-urban areas and retained for the study were seen to live in village panchayats (of sub-urban areas) the two samples of buyers from the city and the sub-urban area were named ‘urban’ and ‘rural’ buyers for further reference. Personal interview method was used to collect data through enquiry schedule.

5.1. Analysis of Data

Tools of analysis included frequency tables, ranking method and scoring of statements for qualitative variables (attributes), correlation and regression analysis. Finally, buying behavior of women for personal products (purchase decisions to translate wants into demand) was studied by specifying and estimating an empirical model of demand function.

5.2. Demand Function

It was a multivariate linear regression equation. It was specified as

$$Q_{dj} = \beta_0 + \beta_1 P_j + \beta_2 P_k + \beta_3 PCI + \beta_4 Age + \beta_5 Edn + \beta_6 IM + \varepsilon$$

- where, Q_{dj} = Quantity demanded (No. of units) of product $j = 1, 2, \dots, n$
- P_j = Price (in Rs. per unit) of product j
- P_k = Price of substitute product for j (i.e.) $k \neq j$
- PCI = Per capita annual income of the family of the women (in rupees)

- (as both aggregate annual income and size of family that has to share it, influence demand per capita income is used. It takes care of both variables).
- Age = Age of the women in year
- Edn = Education of women (score)
- IM = Involvement in Marketing (purchasing).
- $\beta_0, \beta_1, \dots, \beta_6$ are parameters to be estimated
- ε = regression (random) error term.

Above empirical model was estimated by Ordinary Least Squares (OLS) method with conventional classical normal assumptions – separately for the samples of urban and rural women buyers of personal care products in each of the five categories of personal care products, viz., Oral care products, Skin care products, Hair care products, Beauty care products, Health care products

5.3. Discriminant Function

A discriminant function analysis is applied to any two groups to know the variables that significantly discriminate the members of one group from the other group. In this study it is therefore, useful to understand the difference, in buying behavior of urban and rural women buyers of personal care products.

5.4. Construction of Discriminant Function

Discriminant Function Analysis attempts to construct a function with a set of predefined variables so that the women buyers belonging to either of these two groups are differentiated at the maximum. The linear combination of the variables is known as discriminant function and its parameters are called discriminant function coefficients.

5.5. The Model

A typical discriminant function will be of the form,

$$Z_i = a_0 + a_1x_1 + a_2x_2 + \dots + a_jx_j$$

where (z) is total discriminant score for the group,

$i = 1, 2, \dots, 200$ observations

x_0, x_1, \dots, x_j are predefined and measured quantitative or qualitative variables.

a_0 – constant

a_1, \dots, a_j – Discriminant Function coefficients of the discriminant variables.

They are the parameters to be estimated.

5.6. Fisher's Discriminant Function

This can also be used for classification. For each group the Fishers's Discriminant Functions using the coefficients in Table . . . can be written as:

$$\text{Group 1: } Y_1 = a_0 + a_1x_1 + a_2x_2 + \dots + a_jx_j$$

$$\text{Group 2: } Y_2 = a_0 + a_1x_1 + a_2x_2 + \dots + a_jx_j$$

for $n_1 = 1, 2, \dots, 100$

$$n_2 = 1, 2, \dots, 100$$

Substituting each discriminant, variable's respective group means in the corresponding two discriminant functions, the cut off score for the two groups are found out, say \check{y}_1 and \check{y}_2 . Now for any new observation (y), in a similar manner the values y_1 and y_2 , can also be found out by substituting value of the respective variables for this new case.

If $\check{y}_1 \leq y_1$, then the buyer is classified as group 1 and

If $\check{y}_2 \leq y_2$, then the buyer is classified as group 2

5.7. Interpretation

Once the discriminant function and its classification efficiency are assessed, then the next question that remains to be answered is: how efficient are the discriminating variables in the discriminant function? This cannot be answered directly. However, the discriminating power or the contribution of each variable to the function can sufficiently answer the question. One method is by examining the discriminant function to determine the relative importance of each discriminating variable in the discriminant function between the two groups. It is given by the structural corrections which measures the simple linear correlations between each independent variable and the discriminant function. The R^2 gives the percent contribution of each variable to discriminant function.

Another method of calculating the discriminating power of each variable is obtained by creating the Relative Discriminating Index (R_j) which is formed using the discriminant function coefficients and the respective group means of discriminant variables. R_j is the percent contribution of each variable to the discriminant function.

5.8. Variables Identified and Measured

The following were the variables identified as those discriminating the two groups of women buyers of personal care products and their measures are stated below:

$$Y = Z_i = \text{Discriminant Index}$$

- for $i = 1, 2, 3, \dots, n_1$ and n_2 buyer
- X_1 = Exp = Expenditure on PCP's (Rs./month) for the family
- X_2 = Age = Age of buyers in years
- X_3 = Edn = Education of Buyers Score 10 – College, 8 – HSc, 6 - SSLC, 4 – upto 9 std, 0 – No education.
- X_4 = Income = Rs./year/per capita
- X_5 = MS = Market Segment (Score)
- X_6 = Awa = Awareness (Score)
- X_7 = MO = Sources of Motivation Rank Score
- X_8 = Per = Perception (Score)
- X_9 = Sat = Satisfaction (Score)
- X_{10} = Earners = No. of Earners in the family (No.)
- X_{11} = PBR = Personal Business Relationship with Retailer (Score)

All scores come from Likert's scaling technique.

6. Results and Discussion

6.1. Profile of Women Buyers

The profile of the women buyer refers to the structural characteristics that are given (have fixed values) for the period of study. They include: Age, Education, Employment, Type of family, Marital Status, Family Status Size of family, Annual Family income.

Sl. No. (1)	Area (2)	Mean (3)	SD (4)	CV (%) (Years) (5)
1	Urban	30.39	12.68	41.74
2	Rural	29.74	10.91	36.69
	Total	30.06	11.80	39.25

Table 1– Age of the Women Buyers

Note: $CV(\%) = SD*100/Mean$

The mean age of women consumers is around 30 years and there is no significance difference in the average of urban and rural women buyers.

The standard deviation is large, causing CV to be 41.74 percent for urban buyers and 36.25 percent for rural buyers showing wide dispersion, that allows varying responses of women buyers. The samples are comparable.

Sl. No. (1)	Educational Status (2)	No. of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Upto 8 years	8	25	33	16.5
2	SSLC	13	21	34	17.0
3	H.Sc	47	32	79	39.5
4	UG	31	22	53	26.5
5	PG	1	-	1	0.5
	Total	100	100	200	100.0

Table 2 – Educational Status of the Women Buyers

Thus, the educational status of women buyers is high and there are more women buyers educated beyond SSLC in urban area than in rural area.

Sl. No. (1)	Marital Status (2)	Women Buyers (No.)			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Married	42	51	93	46.5
2	Unmarried	58	49	107	53.5
	Total	100	100	200	100.0

Table 3 –Marital Status

Unmarried women form a large sub-group in the market segment of women buyers of personal care products. Naturally they have to be target group for the special attention of dealers (producers and sellers) of personal care products. The promotion of products and their sales have to take care of the needs and preferences of those unmarried women buyers.

Average of the buyers is around 30 years for both urban and rural buyers, the percentage of women having education of H.Sc or higher level is high. These two facts read with the dominance of unmarried women (53.5 percent for whole sample) would suggest that the target group must be young educated girls in the age of 15 to 30 years.

Sl. No. (1)	Family Status (2)	No. of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Earning members	18	38	56	28.0
2	House wife	30	25	55	27.50
3	Student	52	34	86	43.0
4	Single women	-	3	3	1.5
	Total	100	100	200	100.0

Table 4 – Family Status of the Women Buyers

The housewives and students who are not earners account for 70.5 percent of women buyers. This draws attention to the employment status of women buyers.

Sl. No. (1)	Occupational Status (2)	No. of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Govt. employee	4	2	6	3.0
2	Private employee	18	10	28	14.0
3	Self employed	5	16	21	10.5
4	Professional	1	-	1	0.5
5	None	72	72	144	72.0
	Total	100	100	200	100.0

Table 5 – Employment Status of the Women Buyers

Most of the women buyers of personal care products are unemployed and they spend income of others in the family. Incidentally, it also shows that employed women are potential target for promoting personal care products.

Sl. No. (1)	Size of Family (No. of Persons) (2)	No. of Families of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	One	3	-	3	1.5
2	Two	18	14	32	16.0
3	Three	25	21	46	23.0
4	Four	33	35	68	34.0
5	Five	16	19	35	17.5
6	5 - 10	5	11	16	8.0
7	More than 10	-	-	-	-
	Total	100	100	200	100.0

Table 6 – Distribution of Families of Women Buyers by Their Size

The distribution of women buyers of personal care products shows family size is larger in rural areas as compared to urban areas. This can be expected to make a difference in buying behavior of the two groups: urban and rural buyers of personal care products.

Sl. No. (1)	Type of Families (2)	No. of Families of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Nuclear	65	46	111	55.5
2	Joint	35	54	89	44.5
	Total	100	100	200	100.0

Table 7 – Type of Families of Women Buyers

Rural families of buyers of personal care products are more conservative in spending on these products as the per capita income (consequently per capita consumption expenditure) would be smaller. Therefore, income of the families as a limit of their purchasing of women buyers of personal care product, need a close study.

Sl. No. (1)	Income Class (2) (Rs.)	No. of Families of Women Buyers			
		Urban (3)	Rural (4)	Total (5)	% (6)
1	Less than 1 lakh	10	20	30	15.0
2	1-2 lakhs	10	16	26	13.0
3	2-3 lakhs	22	13	25	12.5
4	3-4 lakhs	29	25	54	27.0
5	4-5 lakhs	10	22	32	16.0
6	More than 5 lakhs	19	4	23	11.5
	Total	100	100	200	95.0

Table 8 – Distribution of Families of Women by Their Income Status
Note: Income refers to total annual income of the family of Women buyers

In the whole sample (of 200 women buyers of personal care products) middle income group is the dominant group - it is the feature of buyers of personal care products. Further, income of the family is a determinant in demand for these products – the theoretical expectation it is.

The inference from discussion of income classes suggest that families of urban women buyers of personal care products had larger annual family income as compared to their counterparts of rural women buyers. This aspect is highlighted in table below.

Sl. No. (1)	Distribution Statistics (2)	Income in Rs./year		
		Urban (3)	Rural (4)	Difference (5)
1	Min Value	36,000	25,000	11,000
2	Max Value	10,42,000	7,30,000	3,12,000
3	Mean	4,83,480	3,68,876	1,14,604
4	SD	10,58,570	7,43,465	-
5	CV (%)	218.95	201.55	-

Table 9 – Distribution of Annual Income of Women Buyers
Note: Annual income of the family refers to total income of all earners

As seen in the table, the difference in annual family income of women buyers of the personal care products is positive and larger for urban buyers as compared rural women buyers – in minimum, maximum and mean levels. The variance (SD) within each group and consequently CV (%) are also very large. This has to be expected from details of income classes studied above.

6.2. Per Capita Income of Families of Women Buyers

The total annual income of a family is a major source of its spending power, besides its willingness and ability to borrow. However, the actual spending pattern depends largely on the size of family, because total income must be shared by all members in the family. Of course, it is not necessary that all members should get equal share. However, what average income available for each member, is an important information – it is per capita annual income. Details for the sample families are presented in Table below.

Sl. No. (1)	Group (2)	Average Annual Income (Rs.) (3)	Size of the Families (No. of persons) (4)	Per Capita Annual Income (Rs.) (5)
1	Urban	4,83,480	3.66	1,32,098
2	Rural	3,68,876	3.84	96,061

Table 10 – Per Capita Income of Families of Women Buyers
Note: Col 5 is Col (3)/Col (4)

Average size of family is four persons in both urban and rural areas. Therefore average per capita annual income (PCI) is Rs.1,32,098 for urban families as compared to Rs.96,061 for rural families. Therefore, rural families can be expected to spend less on personal care products as compared to urban families.

When per capita annual income of the families is taken as an explanatory variable in demand function for personal care products (say for any product/service) it takes care of two variables that determine the ability to spend – (i) total purchase limit and (ii) the effect of size of family i.e., the number of persons to share the purchase limit. This PCI is large for families of both urban and rural women buyers of personal care

products. Its elasticity coefficient in the demand function deserves attention. For personal care products – which are either luxuries or conventional necessities, the elasticity of demand is positive.

6.3. Buying Behaviour

In the market, the personal desire and preferences of buyers get translated into demand for the products. This translation involves their perception on the utility of the products to the individual buyers. Two important inputs in the process are; (a) The budget constraint (disposable income and credit available - today credit cards enhance the purchasing power) and (b) their post-purchase experience determining their level of satisfaction/dissatisfaction. This buying behavior can be understood by identifying factors that influence the demand for the products and their relative strength, with the help of an empirical model of demand. A rational decision is assumed in literature for the behavior of buyers. However, in practice this assumption is seen to be weak. There are cases of imitation, habitual buying, brand loyalty and influence of promotional efforts causing impulsive buying. The women buyers of personal care products were asked to state their criteria for making buying decisions and to show their strengths in a five point graded scale. The mean scores of the buyers are presented in Table below

Sl. No.	Criteria	Urban Women Buyers			Rural Women Buyers		
		Mean Score	%	Rank	Mean Score	%	Rank
1	Price response	3.818	76.4	1	3.699	74.0	1
2	Preference to brand	3.246	64.9	4	3.353	67.1	5
3	Quality assessment	3.234	64.7	5	3.410	68.2	4
4	Habitual decision	3.636	72.7	3	3.640	72.8	2
5	Response to ad	3.641	72.8	2	3.630	72.6	3

Table 11 – Factors Motivating Women Buyers on Their Purchase Decisions

Note: i) %-percentage to maximum possible score of 5 ii) %- percentage is used to rank

The demand in response to price of the products and their substitutes is a rational decision. It ranks first with the largest mean score- for both urban and rural women buyers of personal care products. The response to ads, i.e., impulsive buying ranks second and third for urban and rural women buyers. It is not rational, and it would be given up on the basis of post purchase experience as shown by the third and the second rank for habitual buying for urban and rural buyers respectively. Quality assessment and brand loyalty are rational. They rank fourth and fifth. Thus the theoretical assumption of rationality holds fairly well with women buyers of personal care products. It justifies the use of empirical model of demand function to describe the buying behavior of women buyers of personal care products in Coimbatore district.

6.4. Demand Functions

6.4.1. Urban Women Buyers’ Demand Functions

The demand functions estimated for urban women buyers of personal care products are presented category wise with the test statistics in table below

Sl. No.	Categories of PCP	Variables	Constan t	P _j	P _k	PCI	Age	Edn	IM	R ²	SEs	Sig of F
		Parameters	β ₀	β ₁	β ₂	β ₃	β ₄	β ₅	β ₆	(F)		
1	Oral Care Products	$\hat{\beta}_j$ \hat{t}_j	5.123 ^{NS} 1.225	-0.510* -2.901	0.247 ^{NS} 1.557	0.064** 6.870	- 0.168** -3.316	0.232* 2.121	2.231* 4.859	0.912** (160.72)	2.315	**
2	Skin Care Products	$\hat{\beta}_j$ \hat{t}_j	7.877 ^{NS} 1.735	-0.293** 44.893	0.071** 32.059	0.019** 9.451	-0.046* -2.131	0.882** 20.606	0.555* 3.723	0.984** (1020.76)	0.887	**
3	Hair Care Products	$\hat{\beta}_j$ \hat{t}_j	6.225 ^{NS} 2.005	-0.068* 3.037	0.089* 2.405	0.093** 13.276	- 0.205** -3.180	0.234* 2.893	3.405* 7.328	0.734** (47.722)	2.743	**
4	Beauty Care Products	$\hat{\beta}_j$ \hat{t}_j	7.491* 2.789	-0.078** 3.309	0.083 ^{NS} 0.720	0.026** 10.129	- 0.158** -5.391	0.167* 2.400	0.549* 2.610	0.709** (37.696)	1.295	**
5	Health Care Products	$\hat{\beta}_j$ \hat{t}_j	7.081* 2.113	-0.606* -2.833	0.005 ^{NS} 0.492	0.063* 2.739	-0.047* -2.611	0.130* 2.120	0.189* 2.224	0.713** (10.922)	1.310	**

Table 12 – Estimated Demand Functions for Personal Care Products – Categorywise for Urban Women Buyers

Note: * Significant at five percent level n = 100 df = 9 3 SEs: Standard Error of Estimate

** Significant at one percent level j = 0, 1, ..., 6 NS Not Significant

As seen in the table, all the five demand functions satisfy the three criteria stated above. Therefore, they are all valid to draw inferences. The demand functions have high predictive power, as shown by the large and statistically significant values of the coefficient of multiple determinant – R^2 . All the F values are significant at one percent level vide last column of the table. The predictive power of the estimated equations is in the range of 70.9 percent to 98.4 percent. In other words six explanatory variables included in the demand functions would explain 70 percent to 98 percent of variation in the demand for the personal care products for urban women buyers. The personal care products for women are classified into five categories. For each category the estimated demand functions are discussed below:

6.4.2. Oral Care Products

Oral care products include tooth brush (5), tooth paste (12), tooth powder (6) and mouth wash (3)*. The demand function for this category of products has small value for the regression constant (β_0), that is not statistically significant at five percent level (vide t value). It means that the demand function for oral care products has no specification error.

The products are measured in standardized unit of packages. For tooth brush it is number demanded per year. As brushes are used for more than three months it is convenient to measure the quantity demanded in number per year.

For other products there are different size of packages such as 50 gms, 100 gms and 140 gms. Therefore all packages were converted to the equivalent number of standardized packet – 100 gms for tooth paste case. The tooth powder is measured in standardized units of 100 gms while mouth wash is in 50 ml units. Then quantity demanded of the product is measured in number of units of standardized product.

Also, the price of the product and its substitutes are worked out for a standardized product. This exercise brings homogeneity in the variable studied.[@]

The partial regression coefficient (β_1) of the price of the product (P_i) has the expected negative sign and it is statistically significant at one percent level. Therefore inference is that *ceteris paribus*⁺ a unit increase in price of the product would decrease the quantity demanded of the product by 0.51 unit. In other words, an increase in price (in Rs. per standardized unit) by Rs.2 would decrease the quantity demanded of the product by one unit, evaluated at centroid^{**}. This is a rational behavior consistent with the theory of demand.

The partial regression coefficient (β_2) of the price of the substitute for the product (P_k), has expected positive sign, but it is not statistically significant. Therefore the inference is that for oral care products price of their substitute has no effect on the quantity demanded of the product. In other words, the products in use are not easily substituted.

The partial regression coefficient (β_3) of per capita income (in Rs. '000 per year) (PCI) has the expected positive sign but is statistically significant. Therefore, income effect on demand for oral care products is positive. The women buyers use their selected products in large number as income increases and enhances their purchasing power, *ceteris paribus*.

The regression coefficient (β_4) age of the women buyers has a negative sign and it is statistically significant. It shows that *ceteris paribus*, older women buy less of oral care products than young girls.

The regression coefficient (β_5) has a positive and significant value. It means that education encourages women to appreciate the benefits of oral care products and to buy more of them, *ceteris paribus*. Educated women are able to understand the information on personal care products, available in print media especially in women focused magazines.

The coefficient (β_6) of the variable (IM) involvement in marketing – such as early adoption and selective purchases with awareness about quality, price and utility of the products, has a positive and statistically significant value revealing that *ceteris paribus* IM is an important decision variable in the demand for oral care products.

Thus all the six explanatory variables specified in the demand function for oral care products are the decision variables in the buying behavior of urban women buyers. They could explain nearly 92 percent of variation in demand for the products.

6.4.3. Skin Care Products

The skin care products used by urban women buyers include: soaps (24); talcum powder (21) and face wash (18). The demand function estimated for the skin products shows results similar to those for oral care products. Therefore inferences are the same. All the six variables explain the demand for skin care products, their effect on demand are negative for price of the product and age of the buyers are positive for all other variables. It is consistent with *a priori* expectations. They would jointly explain nearly 98 percent of variation in demand for skin care product – a good fit, it is.

6.4.4. Hair Care Products

The hair care products used by urban women buyers include: hair oil (19), shampoo (25), conditioners (10) and hair dyes (10). The demand function estimated for these products would explain 73 percent of variation in quantity demanded ($R^2 = 0.734$) – it is a good fit. Inferences are same as those for oral and skin care products.

6.4.5. Beauty Care Products

The beauty care products include: fairness creams (16), perfumes (33), lipsticks (9) and Nail Polish (18). The estimated demand function would explain nearly 71 percent of variation in quantity demanded by urban women, of beauty care products ($R^2 = 0.709$). This function has regression constant (β_0) that has a positive sign and statistically significant value. It reveals that there might be specification error such as omission of some relevant explanatory variables (such as imitation, group behavior etc.). However, the

predictive power of the function is high and hence it is used for drawing inferences price of the substitute product (P_k) has no influence on demand for beauty care products as shown by the non- significant value of its coefficient (β_2). It would suggest that price of the product is main determinant of the demand. It may be due to brand loyalty or the buyers' perception of the price to be a measure of the quality of the product. Income effect, influences of education and of involvement in marketing are all positive. The older women buy less than relative young women (see $\beta_5 < 0$).

6.4.6. Health Care Products

The health care products include: sanitary napkins (7); hand wash (12), lotions (15), deodorants (17) and hair remover (6). The demand function estimated for health care products used by urban women would explain 71 percent of variation in quantity (number of standardized units) demanded by the women. Here again the coefficient (β_2) of the price of substitute is not statistically significant revealing brand loyalty. There is also omission of some relevant variables to be identified and included in future research. Price of the product (P_j) and age of the buyers have negative influence on quality demanded of health care products. Per capita income, education and involvement in marketing of women buyers have positive effect on the demand for health care products.

Thus, for all the five categories of personal care products used by urban women buyers, income (purchasing power) of the buyer their educational level and their extent of involvement in marketing (IM) in evaluating and choosing the product have positive effect on demand, while the price of the product and age of the buyers have negative effect on the demand. The demand functions estimated for all the five categories of personal care products have good predictive power ($R^2 \geq 0.71$). While the demand functions for products for (i) oral care, (ii) skin care and (iii) hair care products have no error of specification (β_0 is not significant) those for (iv) beauty care and (v) health care products (with β_0 significant) show omission of some relevant variable even though their predictive power is high ($R^2 \geq 0.71$). The price of substitute has no effect on demand for beauty care and health care products. There seems to be brand loyalty and decisive motivated buying behavior for them.

6.5. Demand Functions: Rural Women Buyers

The five demand functions estimated for the five categories of personal care products used by rural women buyers (100 nos.) are presented the table below.

Sl. No.	Categories of PCP	Variables	Constant	P_i	P_k	PCI	Age	Edn	IM	R^2	SEs	Sig of F
		Parameters	β_0	β_1	β_2	β_3	β_4	β_5	β_6	F		
1	Oral Care Products	$\hat{\beta}_j$ \hat{t}_j	12.464** 10.623	-0.286** -2.742	0.076* 2.235	0.088** 7.467	-0.063** -2.557	0.182** 2.716	0.454* 2.199	0.861** (95.986)	1.881	**
2	Skin Care Products	$\hat{\beta}_j$ \hat{t}_j	5.566* -2.731	-0.450* -2.432	0.044 ^{NS} 0.199	0.093** 5.452	-0.074 ^{NS} -1.184	0.247* 2.520	1.162* 2.690	0.697* (45.339)	1.637	**
3	Hair Care Products	$\hat{\beta}_j$ \hat{t}_j	5.560** 3.013	-0.331* -2.236	0.287 ^{NS} 1.731	0.029* 0.013	-0.233** -5.103	0.975** 4.059	1.151** 3.205	0.787** (39.788)	1.914	**
4	Beauty Care Products	$\hat{\beta}_j$ \hat{t}_j	4.191** 3.491	-0.070** 4.213	0.108 ^{NS} 0.981	0.026** 4.213	-0.041* -2.547	0.256* 2.098	0.888** 5.357	0.608** (24.070)	1.547	*
5	Health Care Products	$\hat{\beta}_j$ \hat{t}_j	5.927** 7.617	-0.030** -3.333	0.014 ^{NS} 1.138	0.017** 3.315	-0.065** -4.078	0.218* 2.165	1.170* 2.167	0.690** (34.905)	1.255	**

Table 13 – Estimated Demand Functions for Personal Care Products – Category wise for Rural Women Buyers

Note: * Significant at five percent level $n = 100$ $df = 93$ SEs: Standard Error of Estimate

** Significant at one percent level $j = 0, 1, \dots, 6$

NS Not Significant

Sl. No.	Variables	Units	Urban Buyers		Rural Buyers		d (m ₁ - m ₂)	t _d	Sig of t _d
			Mean (m ₁)	SD ₁	Mean (m ₂)	SD ₂			
1	Oral Care Products* - Qty	Q ₁	15.80	7.38	11.32	4.89	4.48	5.06	**
2	Price (Rs./Unit)*	P ₁₁	40.76	27.75	41.84	28.82	(-)1.08	(-)0.27	NS
3	Price of Sub (Rs./Unit)	P ₁₂	36.24	25.85	37.32	27.43	-1.08	0.77	NS
4	Skin Care Products - Qty	Q ₂	10.92	7.03	7.64	4.97	3.28	3.86	**
5	Price (Rs./Unit)	P ₂₁	45.48	20.44	44.16	20.67	2.32	1.67	NS
6	Price of Sub (Rs./Unit)	P ₂₂	50.44	26.12	48.36	18.14	2.08	2.18	NS
7	Hair Care Products - Qty	Q ₃	14.84	5.15	10.00	3.61	4.84	2.63	*
8	Price (Rs./Unit)	P ₃₁	57.28	12.36	55.32	13.86	1.96	1.86	NS
9	Price of Sub (Rs./Unit)	P ₃₂	53.52	11.12	50.76	12.89	2.76	1.70	NS
10	Beauty Care Products - Qty	Q ₄	16.64	2.32	11.00	2.40	5.64	17.0	**
11	Price (Rs./Unit)	P ₄₁	119.60	63.97	116.04	61.47	3.56	1.98	NS
12	Price of Sub (Rs./Unit)	P ₄₂	109.56	59.67	105.60	63.66	2.96	0.34	NS
13	Health Care Products - Qty	Q ₅	8.00	1.66	5.08	1.40	2.92	13.46	**
14	Price (Rs./Unit)	P ₅₁	105.80	99.59	97.96	84.77	7.84	0.60	NS
15	Price of Sub (Rs./Unit)	P ₅₂	93.96	80.73	90.28	68.92	3.68	0.35	NS
16	Common Variables Per Capita Income (Rs. '000/yr)	PCI	111.32	81.37	85.20	54.67	26.12	2.67	*
17	Age of Buyers (years)	Age	27.44	5.81	29.16	4.17	(-)1.72	-2.39	*
18	Education (Score)	Edn	9.68	3.31	8.01	3.39	1.67	3.55	**
19	Marketing Involvement (Score)	IM	8.48	1.24	5.72	3.09	2.76	3.17	**

Table 14 –Demand Function Variables – Mean Difference between Urban and Rural Women Buyers of Personal Care Products

Note : i) Qty – in No. of Standardized Units, Price of Product per Standardized Unit, Price of Sub

(i.e.) substitute product in Standardized Units

ii) PCI, Age, Edn and IM are common for all category of products

iii) $t_d = d/SE_d$ where $SE_d = \sqrt{(\sigma_1^2 + \sigma_2^2)/100}$ and σ_1^2 and σ_2^2 are variances of urban and rural buyers.

As shown by the t values (t_d) of mean differences average prices are not statistically significant for both products purchased and their substitutes. This result is seen in the demand functions of all the five categories of products. In contrast average quantity demanded differs significantly for all the five categories of products between the two groups of women buyers – rural women buyers buy less.

The common variables in all the demand functions also statistically differ in mean values (vide t statistics). The per capita income (in Rs. per year), educational level and the score for involvement have smaller mean values (m₂) for rural women buyers as compared to urban women buyer (d > 0). In contrast the mean age of rural women buyers is larger than that of urban women buyers (d < 0) and the differences are statistically significant. This result justifies the use of a discriminant function to discriminate the two groups and it includes additional variables too – in all 11 variables were included.

6.6. Discriminant Analysis

Discriminant analysis is a statistical technique which allows to study the differences between two or more groups with respect to several variables simultaneously and provide a means of classifying any object/individual into the group with which it is most closely associated and to infer the relative importance of each variable used to discriminate between different groups.

A linear combination of predictor variables, weighted in such a way that it will best discriminate among groups with the least error is called a linear discriminant function and is given by:

$Z = L_1.X_1 + L_2.X_2 + \dots + L_i.X_i$, where X_i's are predictor variables, L_i's represents the discriminant coefficients, and D is the value of the discriminant function of a particular individual/element such that if this value is greater than a certain critical value $D^* = (\bar{D}_1 + \bar{D}_2)/2$, the individual would be classified in group I; otherwise the individual would be classified in Group II.

In the present study there are two groups namely women buyers from urban areas (Group I: n₁ = 100) and women buyers from rural areas (Group II: n₂ = 100). Eleven Predictor variables were considered. They are:

X₁ - Exp, X₂ - Age, X₃ - Education, X₄ - Income, X₅ - Marital status, X₆ - Awareness, X₇ - Motivation, X₈ - Perception, X₉ - Satisfaction, X₁₀ - Earners and X₁₁ - PBR.

Variables	Women Buyers	
	Urban (n ₁ =100)	Rural (n ₂ =100)
X ₁ – Expenditure (Rs./month)	118.7	64.64
X ₂ – Age (in years)	27.44	29.16
X ₃ – Education (Score)	9.68	8.01
X ₄ – Income (Rs. '000 PCI/yr)	111.32	85.20
X ₅ – Marital status (Score)	6.48	7.72
X ₆ – Awareness (Score)	3.2	2.08
X ₇ – Motivation (Score)	7.74	4.02
X ₈ – Perception (Score)	5.42	3.18
X ₉ – Satisfaction (Score)	6.52	7.66
X ₁₀ – Earners (No. per family)	2.06	1.7
X ₁₁ – PBR (Score)	7.8	8.06

Table 15 – Mean Scores of Variables Compared

Note: i) All scores are of Likert's graded scale. ii) PBR – Personal Business Relationship with the retailers.

Variables	Wilk's Lambda	F (DF = 1, 198)	Sig (Prob)
X ₁ – Expenditure (Rs./month)	0.99	2.38	0.12
X ₂ – Age (in years)	0.98	4.45*	0.04
X ₃ – Education (Score)	0.90	21.05**	0.00
X ₄ – Income (Rs. '000 PCI/yr)	0.93	13.82**	0.00
X ₅ – Marital status (Score)	0.71	82.05**	0.00
X ₆ – Awareness (Score)	0.48	215.00**	0.00
X ₇ – Motivation (Score)	0.45	239.83**	0.00
X ₈ – Perception (Score)	0.82	44.15**	0.00
X ₉ – Satisfaction (Score)	0.91	20.48**	0.00
X ₁₀ – Earners (No. per family)	1.00	0.07	0.80
X ₁₁ – PBR (Score)	0.70	85.82**	0.00

Table 16 – Test for Equality of Group Means – Univariate ANOVA

Note: *-Significant at 5 % level **-Significant at 1 % level

All scores are Likert's Score based. The result presented in the table above justify the use of discriminant analysis. Only three variables show non-significant differences between groups.

6.7. Canonical Discriminant Function

The specified multiple linear discriminant function was estimated by stepwise method. The estimated equation is presented below. Only seven variables are retained.

$$Z = -3.959 + 0.013 X_1 + 0.028 X_2 + 0.095 X_3 + 0.197 X_4 + 0.336 X_7 + 0.651 X_8 - 0.366 X_9$$

6.7.1. Test Statistics

Eigen value: 4.223

Percentage of variation explained: 100

Wilks Lambda = 0.191

Chi-square = 321.54** DF = 7 p = 0.000

Canonical Correlation: 0.899

Functions at Group Centroids		
Function		
VAR00012	1	
	1	2.044806
	2	-2.04481

Unstandardized canonical discriminant functions evaluated at group means

6.8. Classification of Women Buyers

Using the discriminant function fitted and the observed predictor variables of the women buyers, the women buyers are classified and classification is presented in *Table: 4.23*.

Women buyers	Urban Buyers	Rural Buyers	Total
Urban	98	2	100
Rural	0	100	100

Table 17 – Classification of Women Buyers

From the above table it is observed that out of 100 urban women buyers, 98 (98 %) are correctly classified; out of 100 rural women buyers, all the 100 (100 %) were correctly classified. Hence the percentage of correct classification is $(198/200)*100$ or 99 percent of original grouped cases correctly classified. It clearly indicates adequacy of the model in discriminating between the two groups.

6.9. Relative Importance

The relative importance of each predictor variables in discriminating between the two groups is obtained and the results are presented below.

Variables	Variable Coefficients (I _j)	Relative Importance (R _j) (%)	Rank
X ₁ – Expenditure (Rs./month)	0.6804	16.2	3
X ₂ – Age of women (in years)	0.0541	1.3	7
X ₅ – Marital status (Score)	0.1179	2.8	6
X ₆ – Awareness (Score)	0.2209	5.3	5
X ₇ – Motivation (Score)	1.2505	29.8	2
X ₈ – Perception (Score)	1.4572	34.7	1
X ₉ – Satisfaction (Score)	0.4168	9.9	4
Total	4.1978	100.0	

Table 18 – The Relative Importance of Discriminating Variables

Note: $j = 1, 2, 5, 6, 7, 8, 9$

Three variables namely, perception, motivation and expenditure on PCP in Rs./month are substantially important variables in discriminating between groups viz., women buyers from urban and women buyers from rural areas. Other four variables also discriminate women buyers of the two groups, but relatively less effectively.

Thus, there is significant difference in buying behavior between urban and rural women buyers of personal care products.. Rural women buyers are less involved in purchase and use of personal care products.

It reveals a vast potential for expansion of the market for these products. Rural women deserve special attention to change their perception, motivation and to encourage their spending on these products. Their age, marital status, perception and post purchase experience (satisfaction) deserve attention in product and sales promotional efforts of the suppliers.

7. Summary, Conclusion and Implications

In the market, the personal desire and preferences of buyers gets translated into demand for the products. This translation involves their perception on the utility of the products to the individual buyers. Two important inputs are; (a) The budget constraint (disposable income and credit available - today credit cards enhance the purchasing power) and (b) their post-purchase experience determining their level of satisfaction/dissatisfaction. This buying behaviour can be understood by identifying factors that influence the demand for the products and their relative strength

- The demand in response to price of the products and their substitutes is a rational decision. It ranks first with the largest mean score-for both urban and rural women buyers of personal care products. The response to ads, i.e., impulsive buying ranks second and third for urban and rural women buyers. It is not rational.
- Quality assessment and brand loyalty are rational. They rank fourth and fifth. Thus the theoretical assumption of rationality holds fairly well with women buyers of personal care products.
- All the six explanatory variables specified in the demand function for oral care products are the decision variables in the buying behaviour of urban women buyers. They could explain nearly 92 percent of variation in demand for the products.
- For all the five categories of personal care products used by urban women buyers, income (purchasing power) of the buyer their educational level and their extent of involvement in marketing (IM) in evaluating and choosing the product have positive effect on demand, while the price of the product and age of the buyers have negative effect on the demand. The demand functions estimated for all the five categories of personal care products have good predictive power ($R^2 \geq 0.71$). While the demand functions for products for (i) oral care, (ii) skin care and (iii) hair care products have no error of

specification (β_0 is not significant) those for (iv) beauty care and (v) health care products (with β_0 significant) show omission of some relevant variable even though their predictive power is high ($R^2 \geq 0.71$). The price of substitute has no effect on demand for beauty care and health care products. There seems to be brand loyalty and decisive motivated buying behaviour for them.

- The results show that there is specification error of course not very serious error- of omission of some relevant explanatory variables for the demand function of all the five categories of personal care products of rural women buyers, whereas it was only for beauty care and health care products of urban women buyers.
- Second difference between the estimated demand function for the two samples of buyers (100 each) is that price of substitute products has no effect
- (β_2 - not- significant) on quantity demanded of all the five categories of personal care products used by rural women buyers, while it was the case with only two demand functions of urban buyers. They are demand functions for beauty care products and health care products only.
- Therefore inference for rural women buyers is similar to that for urban buyers.
- Rural women buyers buy less number of units if the price goes up and vice versa. This is a rational buying behaviour.
- The per capita income of the families (in Rs./year), education of women buyers and the involvement of women in marketing (IM) have a significant and positive effect on quantity demanded. This is seen for all the five categories of personal care products used by rural women buyers.

8. Conclusions

The market for personal care products is fast growing in India. Women are seen to be a fast growing and large segment of the market. Young and educated women appear to be target groups for personal care products. Urban women are relatively more users of these products than rural women.

The electronic media (Television and mobile phones) have largely promoted awareness, knowledge and motivation among women to expand the market for personal care products to make them conventional necessities rather than luxuries. So women are seen to spend more on these products and the market is growing in size.

The retailers have a crucial role in informing women and motivating them to buy the products. Their feedback is an important source of data for planning not only sales promotion but also product promotion to meet their changing preferences of women. Producers and their agents have to recognize this role of the retailers and assist them for effective selling.

The results of discriminant function analysis clearly show that rural women buyers of personal care products lag behind their urban counterparts. They constitute the future potential to be tapped. The variables describing their buying behaviour deserves attention of the marketers.

The electronic media especially with VIP's appeal is the strong source for advertisement; the print media – especially in local language – rank second in reach-out to the consumers.

9. Implications

Above conclusions have specific implications for the marketers of personal care products and for future research they are stated below.

9.1. Marketers

The supply actors in the market for personal care products include producers, their marketing agents and the retailers – they are the marketers. Among them retailers – who are mostly multiproduct sellers. They are in direct contact with the consumers. Through appeal and advice they promote awareness and sales. The post-purchase experience of buyers gets reflected in their interaction with retailers – both appreciation and complaints on products. These are important for personal care products for women because the products are not basic needs and are usually priced high. Therefore, the retailers play a crucial role in the market chain. The results show that

- retailers role must be recognized, its effectiveness be assessed and suitably used in planning market strategies for personal care products.
- retailers need help in sales promotion in terms of supply of publicity materials, cost of advertisement and periodical appraisal.
- retailers are seen to be an important source of information on market sentiments. Feedback from retailers will be very useful to the dealers to plan promotional efforts – not only for sales but also for product promotion. This will identify target groups such as young educated girls of middle and high income groups and the scope and need for market segmentation combined with market research, their feedback from retailers may even help customization of products. This potential is, at present, not exploited fully and needs special attention of producers.

9.2. Buyers

The study is restricted to women buyers of personal care products. The results show that buyers age, education, per capita income and their involvement in marketing to gain knowledge of the products to determine their utility. The women are increasing awareness of the products and they are rational in their purchase decisions. They are an emerging force emphasizing on quality of products. This new trend needs to be recognized and exploited by the marketers. young educated girls of middle income and high income families are

target groups to be focused on. involvement in marketing is seem to be an important determinant of the demand for personal care products. Women seek reliable and convincing information on products on sale.

9.3. Rural Market Potential

The results clearly show that rural women lack behind urban women in their demand and use of personal care products. The dominance of joint families relatively low per capita income and lesser opportunities to involve in marketing are the causes of their lag. So, the market for personal care products from rural women remains less reached out. It shows the potential for future expansion of market for personal care products.

9.4. Media

Both the retailers and the buyers have offered suggestions for promotion of personal care products. The suggestions are consistent and pragmatic. They recommend use of electronic media especially with appeal from VIP's and use of print media in local languages as the most effective instrument for sales promotion. This suggestion deserves attention of the marketers.

9.4.1. Suggestions

Finally the women buyers of personal care products were requested to give suggestions for increasing sale of the products. In other words, it is their perception on what factors would motivate them to continue to buy and buy more of the products. Their suggestions are listed below.

9.5. Urban Women Buyers

- The urban women suggest that marketers can directly appeal to the consumers by distributing fliers, catalogue distribution, promotional letters etc.
- Increase in use of natural products is gaining preference among women and it is a desire to eliminate the use of products with potentially hazardous chemicals.
- Few buyers observed that cosmetics are expensive products and need discounts.
- Niche products such as anti-ageing, anti-wrinkle and suntan creams, toners, cleansers, astringents, dark circle removing creams, and day and night cream, are flooding shop shelves. According to the women buyers in the urban area and it gives them to choose among them. Here competitive selling is necessary.
- In urban areas women consumers also consider the beautician's advice as a useful input for decision-making.
- Familiarity with the brand name, price and recommendation of friends/relatives who are users, are the key factors taken into consideration while taking a purchase decision in the case of urban women. Therefore, these segments of consumers are target groups to promote sales. Appeal to the leaders bring in followers (laggards).
- The consumer wants products and brands that appeal to the needs of people of different ages, differently. This needs market segmentation of buyers.

9.6. Rural Women Buyers

- Rural women prefer products with attractive packaging, product which promises more benefits, high media presence through advertisements. Packaging plays a major role in the product - offering for rural markets as it is related with affordability, the ability to identify, ease to users and the appeal of the product.
- Rural women are driven by value for money and not price alone. Moderately priced products with an extra dimension or feature, without being positioned as a premium brand are mostly preferred by rural women.
- Trial of new products is likely to be influenced mostly by positive feedback from friends and relatives.
- Rural women make a collective decision (i.e.) by groups and their purchase behaviour is highly dependent on word of mouth information.
- The rural women appreciate exhibitions and road shows because they provide an opportunity to evaluate the product personally and absorb relevant information at their own relaxed pace.
- In case of non availability of their personal care brand at the store where they purchase regularly, they often go to another retail store to get their preferred brand and do not compromise easily. Majority of the consumers do not mind visiting towns/city to purchase good quality brands of personal care products. So, the marketers must constantly monitor the rural consumer purchase behaviour through local retailers and seek their assistance in curbing fake brands.

9.7. Future Research

This study used and extended demand function that included beside economic variables (prices, income) other personal variables (age, education, size of family and involvement in marketing). The estimated equations showed good fit and had high predictive power.

However, most of the variables are qualitative attributes. Likert's summated scale is used successfully in the study to measure the attributes (awareness, perception, motivation, satisfaction, involvement in marketing). There are two important limitations to this scaling technique.

- First, these socia-personal variables are empirical in the sense that their value may differ from one population to another. Thus, the findings of the present research are appropriate for the women buyers of the universe for the study viz., Coimbatore city and its suburban areas. Application of the model elsewhere would require identification and specification of variables appropriate to that area (Universe).
- Second, the use of Likert's scale involves several statements describing the attributes involved. The validity and reliability of data depends on the quality of statements. Therefore, the help of experts in the subject for the study, the persons with experience in field study and extensive review of literature must be used for the purpose.
- For both identification and specification variables and to ensure validity of data care must be taken to conduct comprehensive pilot study and to use personal interview method for data collection.

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