CHAPTER XI

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****   SUMMARY OF FINDINGS AND CONCLUSION

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The economic importance of the affluent group and the fact that so far no study on the consumption behaviour of this stratum of society had been undertaken for a rapidly growing city like Baroda, prompted the choice of this problem for investigation. The importance of determining the parmmeters of consumption expenditure such as the Engel ratio, the marginal propensities to consume, the income elasticities and the socio-economic factors that play a key role in shaping the consumption pattern of this group which, we repeat - acts as 'forerunners of change in demand and consumption' justified clearly the need for filling up this gap in information in the area of household budget studies.[1]

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[1]Marguerite C. Burk, Consumption Economics : A Multidisciplinary Approach, N.Y. : John Wiley and Sons, Inc., 1968, p.109.

The main objective was to investigate empirically the expenditure pattern of a selected group of high income households in Baroda City on the basis of data collected through the administration of an interview schedule cum questionnaire, of a structured type. The data were to be analysed to present the broad spectrum of household expenditure for various commodities and services (food and non-food). The pattern of consumption is reflected, as is well-known, not only by the absolute amounts spent on various items of expenditure, but also in their Engel ratios, that is, the proportion of consumption expenditure to total expenditure, in the relationship between changes in consumption to changes in income, and also between the rate of change in consumption to rate of change in income. Data were analysed to identify the economic and non-economic determinants of consumption. The variables considered in this context were :

> Income, Total Expenditure of the Household, Age of the Head and Size of the Household, Wealth, Region, Dietary habit (Vegetarian / Non-vegetarian), Educational Level of the Housewife, and Occupation of the Head of the Household.

Standard least squares regression technique was employed for trying a few well-known Engel models in order to estimate econometrically the desired parameters.

A review of the existing literature on this topic suggested consideration of the following questions and testing of corresponding hypotheses :

1. The ratio of expenditure on a commodity to total expenditure (Engel Ratio), though by the nature of the definition, generally a decreasing function of income, is an important indicator of the consumption behaviour of a household. Engel's law on food, namely that proportionate amount spent on food will decrease with rising income has been found to be universally valid in all empirical studies. Ours was not expected to prove to be an exception. It was however hypothesized that commodities and services such as milk, fruits and vegetables, clothing etc. which have been found to be luxuries (income elasticity greater than unity with lower income groups) would prove to be necessities for the affluent group (elasticity less than unity). This would show in what manner and to what extent the household budget of the affluent section differs from that of the lower income groups.

2. In particular one could expect a higher quality in food consumption denoted by comparatively increased outlays on protein and vitamin-rich foods and correspondingly decreased outlay on cereals and pulses.

3. As a natural corollary to the first hypothesis the amount spent on non-food should show an increasing trend. The

pertinent question here was : where does the extra rupee go ? Sociological studies of the affluent class describe it as exhibiting wide range of social contacts, enjoying considerable freedom in their personal expenses, and often concerned with matters of social prestige and social expectations, and security for future generations. It was, therefore, hypothesized that there would be positive association between income and expenditure on items which exhibit outwardly their high level of living (rent, domestic servants, conveyance etc.)

4. Family size has been found to have negative association with semi-luxuries like vegetables, fruits etc. and luxuries like conveyance etc. in the case of relatively less affluent groups. The affluent section however is not beset with such financial constraints. It is likely on the contrary that with increasing family size the outlay on such commodities would tend to increase rather than decrease.

5. Family life cycle is a differential which affects the wants hierarchy of households for different types of goods and services. Hence age of the head of the household taken as operational variable for the family life cycle could be expected to be a determinant of consumption. Health is another factor which has a pronounced effect on the

attitudes and value system of a household. In items of a 'conspicuous' nature such as rent, conveyance it could even override the influence of income.

Further, with respect to the consumption of cereals and pulses, it was hypothesized that rice-eaters (who have migrated to Gujarat from the Southern and eastern regions) will persist in their dietary habit and that their rice consumption will be significantly higher than the rice consumption of the wheat eaters (northern and western regions of India). In a similar manner it was hypothesized that wheat consumption would be significantly higher in the case of the wheat eaters. This would show that region is an important factor in the consumption of cereals.

Non-vegetarian families are generally held to spend more on food. It was expected of non-vegetarian households of the affluent group that with their greater purchasing power they would be consuming more of protein and vitamin-rich foods, apart from meat products.

6. Educational level of the housewife and occupation of the head of the household were two other variables which were chosen for investigation. The ignorance of poor illiterate women in matters of diet, and medical care is known, but whether housewifes belonging to the affluent section would exhibit significant differences due to differences in their

educational background cannot be answered without adequate testing. Hence this variable was tested with respect to consumption of protein and vitamin rich foods (fruits, vegetables, milk, milk products, eggs) and with respect to cereals and pulses (carbohydrates). Occupation which is one of the important determinants of social rank could influence non-food consumption through social expectations in respect of particular occupations, and food consumption as well, through the nature of work (greater consumption of beverages etc.) Among the working class occupation has been found to have direct relationship with the consumption of clothing and footwear. With the affluent urban group it was felt more meaningful to have three classes only, namely self-employed, employed professional (managerial and executive) and employed clerical. Association between occupational category and the following items was posited ; Cereals, pulses, proteins and vitamin-rich foods, fats, sugar, clothing, conveyance, insurance and rent.

Summary of the Findings

Demographic Characteristics of the Sample

The sample consisted of one hundred and eightyfive households (randomly selected) of Baroda City with an annual net disposable income (income from all sources less direct taxes) of Rs. 15000 and over. Twentysix percent of

the sample households belonged to the joint family system. The average size of the household was 4.85 persons. In respect of age structure in the sample, the age group 6-14 years constituted the mode of the distribution. Female to male ratio was 0.90. 84.42 per cent of the heads of the households were graduates while among the housewives the percentage of graduates was fortyseven. The sample was predominantly Hindu (nearly 89 per cent). Nearly 53 per cent of the sample households belonged to communities other than Gujaratis. Out of the 185 households 76 reported to be non-vegetarians.

The Consumption Pattern of the Affluent Group

The average household in the sample spends Rs. 2385 per month on food, and non-food (including insurance). The standard deviation for the mean was Rs. 1446 with a coefficient of variation at 0.50. The per capita aggregate monthly expenditure for the entire sample was Rs. 606.50 (s.d. Rs. 307.90) out of which the food bill consumed Rs. 185.30 (nearly 30 per cent). Insurance accounted for Rs. 52.89 (s.d. 58.87), the total expenditure on other non-food items being Rs. 368.31 (s.d. 221.00).

The Engel ratios for the eighteen dominant items of expenditure were :

Non-Food		Food	
Rent	0.163	Milk	0.060
Insurance	0.088	Vegetables	0.033
Conveyance	0.073	Oil	0.022
Clothing	0.060	Fruits	0.020
School Fees	0.044	Rice	0.019
Servants	0.036	Ghee	0.016
Vacation	0.031		
Entertainment	0.022		
Cosmetics	0.20		
Medical	0.019		
Electricity	0.018		
Gift	0.018		
	0.582		0.170

Determinants of Consumption

Income

The percentage allocation of food declined, as income increased, from 37.05 percent to 26.50 percent confirming Engel's law. The sample was divided into two groups (low income and high income) and the goods and services were ranked according to the per capita allocation by the two sub-samples. Spearman-Brown's rank correlation test applied to the pairs of rankings showed that the sample was homogeneous as far as the ranking of top eighteen items were considered.

Following other researchers in consumption studies total expenditure of the household was taken as proxy for income and the data were subjected to more refined statistical tests. In order to assess the influence of income on household consumption of goods and services the sample was divided into three broad classes, less affluent, moderately affluent, highly affluent on the basis of total expenditure of the household (Rs. 650-1850, Rs. 1850-3050, and over Rs. 3050 p.m.) and the per capita consumption on different items were calculated for the three sub-samples. The derived means and variances enabled the application of t-tests for difference in means with pooled variance, taking the sub-samples pairwise. Thus the mean consumption on the individual goods and services of the group I was compared with those of the group II, those of the group II with those of group III and finally those of group I with those of the group III (as defined above). The tests yielded interesting results regarding the nature of preferences of the affluent group when income was taken as the sole determinant.

Among the food and non-food items where there were significant differences between the three broad expenditure classes, it was found that for certain commodities the mean per capita expenditure for all the three groups were significantly different, the higher 'income' groups having higher means. In respect of some other commodities differences were detected only between two of the pairs, say between

group I and group II, and between group I and group III, but not between group II and group III, or between one pair alone. This characteristic provided a criterion for classifying goods into different types on the basis of the significant mean differences between the three income classes.

Type I Commodities :

The absolute amount (value in Rs. per capita / p.m.) spent on fruits, vegetables, electricity, domestic servants, rent, and conveyance rose significantly from one expenditure class to the next higher class. Income has exerted in these cases a significant positive influence on consumption. These items may be termed ' conventional necessities ' for the affluent group, indicating the high levels of living of this group.

Type II Commodities :

In respect of spices, oil, clothing, entertainment the less affluent and the moderately affluent groups did not spend significantly different, but thereafter there was a significant positive income effect so that the highly affluent group spent significantly more than either the middle group II or the income group I. These may be termed pure luxuries as they assume importance suddenly after a certain income level.

Type III Commodities :

These are those goods for which a saturation level has been reached. It was found in the case of cosmetics, school fees and insurance that the mean per capita expenditures of the high and moderately affluent groups did not differ significantly, but the per capita expenditures of these two groups were significantly higher than that of the group I.

Type IV Commodities :

For a number of commodities however the income effect was irregular in the sense that no plausible interpretation could be provided. These are described below :

(a) In respect of other cereals (jowar, millets etc.), eating out, and post and stationery there was no income effect between the group I and the group II. The positive income effect thereafter was such that the high income group III was significantly at a higher level of consumption than the middle group II, but not with respect to the group I.

(b) The mean per capita allocation of the middle group II in respect of medical care was significantly higher than that of the group I, but between group II and group III or between the group I and the group III there were no significant differences.

(c) With respect to footwear, vacation and functions there was significant difference only between the expenditures of the less affluent and the highly affluent groups.

(d) In the case of dal, initial positive effect was followed by a significant negative income effect, but between the low and the high groups there was no significant difference.

The preference analysis showed that the absolute level of consumption (value in Rs.) is not an unimportant factor in considering consumption behaviour.

Estimation of Marginal Propensities to consume and Total Expenditure Elasticity

Econometric models were tried with standard least squares regression technique for estimation of the desired parameters. The forms tried were :

$$Y = b_o + b_1 X + u \qquad \text{(linear)}$$

$$\text{Log } Y = b_o + b_1 \text{log } X + u \qquad \text{(double log)}$$

Where Y represented consumption on a commodity and

X total expenditure of the household and

u the disturbance term.

Since the t-tests had been conducted by dividing the sample into three sub-groups one set of regressions was done along the same lines by partitioning the sample into three income,

group I, II and III (Rs. 650-1850, Rs. 1850-3050 and over Rs. 3050). The other two sets of regressions were done for the entire sample of 185 observations, one with per capita figures, controlling family size and the other, multiple regression with income (total expenditure as proxy), wealth, age of the head of the household and household size as explanatory variables.

Linear Regression with Three Sub-Samples

The linear model was selectively fitted for those goods and services for which the significant influence of income was found among the three expenditure classes. However only with respect to Vegetables, Conveyance, Servants, Vacation and Rent, the F-values of the regression were found to be significant for all the three expenditure classes (less affluent, moderately affluent and highly affluent).

The division of total expenditure by household size showed that the per capita total expenditure of the income group I ranged from Rs. 150 - 830, while that of the income group II from Rs. 220 - 1330 and of the group III from Rs. 490 - 1180 (as defined above).

The marginal propensities and the total expenditure elasticity for the five items are given below :

(Elasticity calculated at the mid-point of each income class)

Table :11.1: Estimates of Marginal Propensities to consume and Total Expenditure Elasticities derived from Regression of Per Capita Commodity Expenditure on Per Capita Total Expenditure

Commodity	Group I		Group II		Group III	
	m.p.c	η	m.p.c	η	m.p.c	η
Vegetables	0.018	0.86	0.018	.64	0.031	0.95
Conveyance	0.177	2.44	0.135	1.63	0.128	1.29
Servants	0.034	1.20	0.028	1.07	0.067	1.10
Rent	0.157	1.04	0.165	0.96	0.172	1.04
Vacation	0.019	0.96	0.061	1.37	0.045	1.14

In the earlier mean difference test all the above items except vacation belonged to the first type, i.e. each higher income group spending significantly more on the commodity. But the marginal propensities to consume have been monotonically increasing only in the case of vegetables and rent. In the case of conveyance the m.p.c has been, in fact decreasing. Combining the earlier result with that of the regression one should say that although the moderately affluent group II spends on the average significantly more then the group I, the marginal influence of income is less in the income group II then in the income group I. In respect of vacation the income effect is more in the income group II than in group I or group III.

The total expenditure elasticities show vegetables to be a necessity (inelastic) while conveyance and servants are luxuries for all the three income groups. Rent is a luxury for the low and the high income groups, I and III and almost a luxury for the middle group II. Vacation is a luxury for the middle and the high groups, and almost a luxury for the group I.

Before these conclusions can be accepted as final it is necessary to weigh the significance of the findings from the regression with all the one hundred and eightyfive observations. We first deal with the two variable model with per capita figures.

Regression of 185 Observations with Per Capita Figures

In order to obtain some stability in the variations the commodities were grouped and commodity expenditure was taken as dependent variable. Per capita total expenditure was the explanatory variable. The commodity groups considered were :

> Cereals and Pulses, Fats (Ghee, Butter, Oil), Sugar, Milk (Milk, Milk Products) and Eggs), Fruits and Vegetables, Rent (Rent, other rents, maintenance), Utilities (Gas, Fuel, Electricity, Telephones), Clothing and Footwear, Intellectual activities (School Fees, Newspaper, Library, Books), Insurance, Conveyance, Servants.

These items accounted for more than seventyfive per cent of total expenditure.

In spite of the high standard deviations for individual commodities, the regression has been satisfactory for all items judged by the significant F-values in all cases.

According to the per capita regression Rent, Insurance, Conveyance, Servants and Non-Food were elastic.

Of the two models tried (i.e. linear and double log) the linear model gave better R^2 values for cereals and pulses, Intellectual Activities, Insurance, Conveyance, Total Food and Total Non-Food, while the double logarithmic model was to be preferred in respect of Fats, Sugar, Milk, Fruits and Vegetables, Rent, Utilities, Clothing and Footwear, Servants.

The corresponding total expenditure elasticities calculated at the mean value of total expenditure for the linear model (Rs. 606.50) and constant elasticity given by the double log model showed the elasticity of goods as follows :

Rent, Insurance, Conveyance, Servants and Non-Food - elastic

Cereals and Pulses, Fats, Sugar, Milk, Milk, Fruits and Vegetables, Utilities, Clothing and Footwear, Intellectual Activities, and Total Food -Inelastic

Conveyance and Servants are highly elastic for this affluent group followed by Insurance and Rent. For the poorer sections of society generally Milk, Clothing and Footwear are luxuries.

while for the affluent group these are clearly necessities. The elasticities for fruits and vegetables, and intellectual activities were nearly unity so that they may be termed semiluxuries for this group.

Multiple Regression with Entire Sample

The influence of Income, Wealth, Age of the Head of the Household and Household size have been assessed through regression with ordinary least squares technique. The usual assumptions about the error terms, namely zero expectation, constant variance and independence of variance have been made. Multicollinearity has not been a critical problem. The models tried were the linear and the double-log. The groups of commodities were the same as in the per capita regression described above.

Contrary to expectations the linear model gave a good fit for many items : Total Food, Total Non-Food, Sugar, Milk, Fruits and Vegetables, Rent, Clothing and Footwear, Intellectual Activities, Insurance, Conveyance, Domestic Servants, while the double-log proved to be relatively better in the case of Cereals and Pulses, Fats, Utilities.

Income proved to be a key variable for all items except in the case of Cereals and Pulses, and Clothing and Footwear. In the case of Cereals and Pulses family size was the dominant

factor, while in the case of the Clothing and Footwear, Wealth was found to exercise major influence. Wealth was an additional significant factor along with Income (Total Expenditure) in the expenditure on Rent as well as Conveyance.

Family Size was significant only in the case of Food, Non-Food, Sugar, Milk, Insurance and Conveyance, apart from Cereals and Pulses. The expenditures on Non-food, Insurance and Conveyance were however negatively influenced by family size.

Age of the Head of the Household was significant only in the case of domestic servants (negatively) and at 0.05 level only, in the case of Cereals and Pulses (positively).

While Income (Total Expenditure) dominated as the key variable in most cases the influence of wealth in the case of clothing and footwear was so strong that total expenditure was significant only at 0.05 level.

The total expenditure elasticities obtained from the multiple regression generally agree with those from the per capita regression

Table 11.2: Total Expenditure Elasticities for Groups of Commodities from Per Capita Linear Regression with Entire Sample and Multiple Regression with Expenditure of Households (Total Expenditure per Capita)

Commodity	Per Capita Model (at Mean) Rs.606.50	Multiple Regression Calculated at Mean Rs.2385 p.m. for Linear Model
Cereals and Pulses	.207	-
Fats	.431	.502 *
Sugar	.472	.562
Milk	.575	.644
Fruits and Vegetables	.762	1.250
Rent	1.272	1.076
Utilities	.873	.896 *
Clothing and Footwear	.707	.838
Intellectual Activities	.848	.996
Insurance	1.225	.988
Conveyance	1.850	1.495
Servants	1.344	2.160

* Constant elasticity given by Double-log Model

Only in the case of insurance, the per capita model placed the good as elastic, while according to the multiple regression double-log model it was inelastic. This is possibly due to the influence of family size, since in the case of rent, insurance and conveyance the per capita model gave higher elasticities and precisely for these commodities family size has strong negative influence. (For rent it is

evident in the double logarithmic model)

As regards methodology we may say that per capita analysis gives fairly good information except in those cases where due to the indivisibility of the good or some other factor family size has negative correlation, with consumption.

Expenditure on Durables

The study has also analysed household expenditures on durables during the year preceding the date of enquiry. Contrary to expectation family life cycle does not seem to have any significant influence on the purchase of durables. Another revealing finding is that durables (annual purchase) also fell under the category of goods with saturation level. This seems to suggest that the top asset holders prefer to keep their assets in liquid form rather than in physical assets.

Conclusion and Recommendations

The preceding exposition of our whole survey work should suffice to convince that the primary objectives of our investigation have been adequately met. The survey has established the consumption pattern of the affluent group of households from the Baroda City. The analysis of the spending pattern has borne out the fact that our affluent section also exhibits

some traits similar to those of the affluent sections of advanced countries. Their concern for items of social prestige and comfort bears testimony to the fact that as a group they have a similar value system.

The estimates of various consumption parameters derived empirically in the study make available - for the first time, to the knowledge of the researcher - important data which can be put to use for varied purposes. Perhaps the most important contribution might still be the fact that a very highly influential section has been shown to be not inaccessible and that this might encourage future researchers to venture making deeper probe into its economic behaviour.

Based on the wide variation in consumption exhibited and the restricted explanatory capacity of the independent variables we feel that further studies of this segment of the population should be undertaken restricting the target of study to specific areas of consumption, such as those related to or governed by values of social prestige, security or wealth accumulation. There is here obviously need for interdisciplinary approach to establish psycho-sociological determinants of economic behaviour as rigorously as possible, given the current state of the sciences. This segment, as the most heavily taxed one, is highly sensitive to probing

questions, but successful studies should be possible if the probe is done piecemeal and good rapport is achieved through well-planned 'personal relations' manoeuvres.
