CHAPTER - VII
FAMILY COMPOSITION AND CONSUMPTION PATTERN

7.1 INTRODUCTION:

The term 'family composition' refers to certain personal characteristics of family members such as their age, sex, marital status, level of education, occupation and the like. While household size is determined on the basis of a simple head counting of the members of a family at any point of time, household composition is determined by expressing each non-adult-male member as a fraction of an adult-male member and then aggregating over the adult-equivalents. While household size determines aggregate consumption need of the family, household composition, on the other hand, explains consumption patterns. More particularly the latter explains the significance of individual commodities in aggregate consumption bundle of the household. Generally, two methods are available in analysing the effects of household composition on household consumption viz. (1) households are classified on the basis of components of household composition into homogeneous groups and then Engel curve analysis is applied to each group and (2) each member of the household is assigned appropriate weights according to his/her personal characteristics, thereafter these weights are
used in the proposed Engel curve analysis. A satisfactory application of the first method requires adequate number of households under each group such that Engel curve analysis can be run for each category without any loss of degrees of freedom. Under the second approach, each member of the household is given a suitable weight on the basis of his/her personal traits, the weighted household size so obtained will be duly accommodated in Engel curve analysis. In view of the non-availability of group wise data, the latter method is generally preferred to the former.

A scientific treatment of household-composition effects on consumption was given for the first time by Prais and Houthakker (1955). However, the idea of family composition influencing the pattern of consumption was conceived in their writings by Engel (1895), Sydenstricker and King (1921), Allen (1942), Nicholson (1949), Henderson (1949), Friedman (1952), Wold and Jureen (1953), Prais (1953b), Forsyth (1960). Singh and Nagar (1973), Singh (1973), Blokland (1976) and Paul (1985, 1989) made a refinement of the idea to estimate household-composition effects on the pattern of consumption.

7.2 CONSUMER UNIT SCALES:

Family composition is a right approximation to determine consumption pattern. Each household requires a minimum amount of income to meet expenditure on minimum needs. The concept of 'minimum income' required to meet 'minimum needs' differs over families of heterogeneous composition. Whether the families have
been able to raise the minimum income to pay for its minimum needs, is conventionally judged on the basis of per capita income of the households. This approach neglects the relative importance of personal characteristics of members of the household in the consumption of specific items. Also this method fails to indicate the presence of economies/diseconomies of scale in household consumption. More particularly, this method overloads the economies of large scale that operate for many items of consumption. To cope with these issues, a scientific practice is to convert each household into a certain number of 'equivalent adults' by the use of some 'equivalent scales' which are otherwise called 'consumer unit scales' consisting of 'consumer unit weights'.

While converting each household into a certain number of equivalent adults by incorporating the preferences of children into the aggregate preference function of the family, a thorny problem is encountered. Children's preferences are controlled by their parents till they reach a definite years of age. Thus, the roles of children in determining consumption patterns are secondary. In a continuously changing world, with the passage of time, the social relationship is changing and therefore, no single relationship can be thought to exist between parents and children. Thus, it becomes highly arbitrary to develop a single and uniform formula for aggregating the preferences of children into the family consumption function. Nicholson (1949) and Henderson (1949) devised a procedure to estimate the cost of an additional child. Under this procedure,
it is to find out the compensating income at which the consumption of a household of two adults and one child would remain the same as that of a family of two adults. They have applied the 'standard commodity method' under which certain 'standard commodities' are to be selected such that the consumption of these commodities depends only on the standard of living of the household and not otherwise on the number of children. However, the difficulty posed here is with respect to defining a standard commodity such that children would have zero coefficient in its consumption. To overcome the difficulties, it is therefore needed to assign suitable weights to each category of family members and then to compute income elasticity as a weighted average.

Expressing household members into adult-equivalents is necessary on following grounds:

1. In the decision-making process, all members of a household participate. Preference functions of individual members differ on the ground of the differences in their age, sex, marital status, level of education and the like. These characteristics of household members interact with each other finally to reach a consensus which reflects on the final decision taken for consumption. All these things can be duly accommodated in family consumption function if each member is assigned a suitable weight in respect of specific item of consumption.

2. The presence of economies/diseconomies of scale is marked in the consumption of certain commodities. To take cognizance of these economies/diseconomies, it is to take the help of equivalent adult-scales.
(3) In the process of macroeconomic decision-making like determination of poverty line, adult-equivalent scales play a fundamental role. For welfare comparison among the families, a definition of 'minimum consumption standard' is required which varies with household composition. Therefore, equivalent adult-scale is needed which helps converting the budgets of different household types into a need-corrected basis.

7.2.1 METHODS OF ESTIMATION - A REVIEW:

For the purpose of evaluating the role of family composition on family consumption on the basis of adult-equivalent scales, two methods are generally available namely,

(i) Normative Scales.
and (ii) Economic Scales.

Normative scales are constructed on the basis of nutritional needs of members of different age and sex belonging to a family. These normative scales reflect relative calorie needs of household members with difference in characteristics ignoring the costs involved to provide with these recommended calorie requirements. A comparison of calorie needs of different persons shows that adult males require more calories than children, white-collar employees require less calories than blue-collar workers, urban people require less calories than their counterparts in rural area and the like. Normative scales donot reflect the average pattern of consumption as the possibility of complementarity among various nutritional elements is ignored. Furthermore, the cost side of providing calorie needs has been skipped-off in these normative scales. It is a matter of convincement
that though adults require more calories than children, the former may acquire it from the consumption of inferior items like cereals while the latter group may acquire the prescribed nutritional needs from the consumption of relatively costly items like milk and milk products, fruits, eggs etc. Similarly, though the urban people require less calories than the rural people, may have to spend more in acquiring recommended level of calories. Thus, normative scales underestimate the cost side of meeting calorie needs of persons of different age and sex. Moreover, the need-based normative scales are seen to be leaning more towards the nutritional and psychological aspects of the problem which has been widely attacked by Atkinson (1970) and thus these scales are not recommended for use in econometric studies of family budgets.

In contrast to normative scales, economic scales are constructed on the basis of actual total household expenditure. Household members contribute differently to the consumption of specific items according to their age and sex. On this basis, an economic scale of adult-equivalents is constructed. Thereafter the Engel curve analysis is done in terms of 'per unit' expenditure rather than in terms of 'percapita' expenditure.

Certain methods are available to estimate consumer unit weights to constitute economic adult-equivalent scales. All these methods can be broadly categorised under (i) discrete scales and (ii) continuous scales.
7.2.1.1 DISCRETE SCALES:

A discrete or discontinuous scale approach holds that scales are constant within each broad age-sex group but are variable over these groups. In the past, a series of attempts were made to estimate these scales as a reaction against normative scales. These normative scales are based on fancy rather than fact and reflect calories required rather than costs involved. Based on the classic work of Syndenstricker and King (1921), the first systematic attempt to estimate economic discrete scales is due to Prais (1953). Subsequently, Prais and Houthakker (1955) and Singh and Nagar (1973) made a more refined and scientific treatment of the concept.

7.2.1.1.1 PRAIS - HOUTHAKKER SCALES:

It is a matter of fact that individual members of the household contribute differently to the household consumption of specific items according to their age, sex and other characteristics. Therefore, attempting to incorporate household composition as a determinant of consumption patterns, Prais and Houthakker (1955) used the concept of 'specific consumer unit scales' under which individual age-sex groups of the household are assigned different weights for specific items of consumption. Likewise each member of the household possesses a share in the total family income. Accordingly, Prais and Houthakker (1955) postulated an overall 'income scale'. Since in family budget studies, household income is proxied by household expenditure, the overall income scale can be approximated by an overall expenditure scale. The basic problem, therefore is to
estimate 'specific' and 'income' consumer unit weights which constitute the 'specific' and 'income' scales respectively.

Prais and Houthakker postulated the following Engel functional form in 'per unit' term that

\[ \frac{Y_{ij}}{\sum_{g=1}^{G} w_{ig} n_{gj}} = f_{i} \left( \frac{X_{j}}{\sum_{g=1}^{G} w_{og} n_{gj}} \right) \] (7.1)

where \( w_{ig} \) is the value of the gth \((g = 1, 2, \ldots, G)\) age-sex group on the specific scales,

and \( w_{og} \) is the value of the gth \((g=1,2, \ldots, G)\) age-sex group on the income scales,

such that \( \sum_{g=1}^{G} w_{ig} n_{gj} \) is the weighted size of the household on the basis of the specific scales.

and \( \sum_{g=1}^{G} w_{og} n_{gj} \) is the weighted size of the household on the basis of the income scales,

where \( n_{gj} \) is the number of persons belonging to the gth \((g=1,2, \ldots, G)\) age-sex group of the jth category of households.

In their opinion the functional form \( f_{i} \) may assume different specifications for different items of consumption. However, they restricted their choice only to those functional forms which provide initial and ultimate critical levels of consumption. By running the regression with the selected form of the Engle function, \((G-1)\) number of ratios of the type

\[ \frac{w_{i2}}{w_{i1}}, \frac{w_{i3}}{w_{i1}}, \ldots, \frac{w_{iG}}{w_{i1}} \]
can be found out under the assumption that \( w_{og} = 1 \) for all \( g \).

Prais and Houthakker method of estimating consumer unit weights suffers from 'crucial identification problem'. Their method of analysis is based on the supposition that all \( w_{og} = 1 \), which means that the total expenditure per capita is taken as an independent variable. Forsyth (1960) and Cramer (1969) showed that without such a hypothesis, the specific coefficients cannot be identified. But Barten (1964) demonstrated the possibility of identification in Prais - Houthakker method if one of the items is discarded from the analysis. Renewed discussion on the subject of identification is seen in Muellbauer (1974, 1975, 1980). But no new argument has been added to the existing ones except that the problem is shown to be only in one dimension. Another solution to the problem is given first by Coondoo (1975) and then by Das Gupta and Paul (Paul, 1989). They suggested that identification in Prais - Houthakker model can be secured if the scales are assumed to be invariant with respect to marginal changes in total household expenditure. This assumption is unlike to hold as the allocation of expenditure among the members in poor families may differ from that made among the members in rich families. Therefore, the above solution does not work in dealing with the problem of identification.

7.2.1.1.2 SINGH - NAGAR SCALES :

Singh-Nagar method of determining consumer unit weights is a modified version of Prais-Houthakker method. This method is seen to be more scientific as it achieves the estimates of equivalence coefficients in the absence of any extraneous information.
like \( w_{og} = 1 \) for all \( g = 1, 2, \ldots, G \). Moreover, this method operates to yield desired results with more than one explanatory variable forming the Engel function which is unlike to happen if the Prais-Houthakker estimation procedure is adopted. This method consists of certain number of iterations which commence on the assumption that \( w_{ig} = 1 \) and \( w_{og} = 1 \) for \( g = 1, 2, \ldots, G \).

To begin the iteration with the Engel function in per unit term:

\[
\frac{Y_{ij}}{\sum_{g=1}^{G} w_{ig} n_{gj}} = f_i \left( \frac{X_j}{\sum_{g=1}^{G} w_{og} n_{gj}} \right) \quad (7.2)
\]

\[
i = 1, 2, \ldots, I
\]
\[
j = 1, 2, \ldots, J
\]

Substitution of \( w_{ig} = 1 \) and \( w_{og} = 1 \) in (7.2) yields the Engel function in per capita term given by

\[
\frac{Y_{ij}}{\hat{f}_i(\frac{X_j}{\sum_{g=1}^{G} w_{ig} n_{gj}})} = \frac{G}{\sum_{g=1}^{G} w_{ig} n_{gj}} \quad (7.3)
\]

where \( \hat{f}_i \) is the most plausible form of the Engel function which explains maximum variation in the dependent variable. The estimates of specific coefficients can be obtained from (7.3) and the income weights from
The second iteration begins with the substitution of \( \hat{w}_{ig} \) and \( \hat{w}_{og} \) for \( w_{ig} \) and \( w_{og} \) respectively in (7.2) and running the regression

\[
\frac{Y_{ij}}{f_i \left( \frac{G \sum_{g=1}^{G} \hat{w}_{og} n_{gj}}{G} \right)} = \sum_{g=1}^{G} w_{ig} n_{gj} \tag{7.6}
\]

From (7.6), the fresh estimates of the specific weights can be obtained as \( \hat{w}_{ig} \) and the income weights as

\[
\hat{w}_{og} = \sum_{i=1}^{I} \lambda_i^{*} \hat{w}_{ig} \tag{7.7}
\]

such that

\[
\lambda_i^{*} = \frac{1}{J} \sum_{j=1}^{J} \frac{Y_{ij}}{X_j/\sum_{g=1}^{G} \hat{w}_{og} n_{gj}} \tag{7.8}
\]

This process continues till the difference between the estimates of \( w_{ig} \) and \( w_{og} \) in two consecutive iterations becomes less than 0.000001.

Though this method is claimed to be superior to the Prais-Houthakker method of estimating equivalence coefficients, is not free from the identification problem. Muellbauer (1975) has demonstrated the existence of identification problem in this procedure, and was of the opinion that the unit scales are indeterminate. Singh and Nagar (1978) complied with the objection of Muellbauer by accepting the specific scales \( \hat{w}_{ig} \) for a given \( i \) as 'prior information'
such that for this commodity the income (expenditure) elasticity of demand is zero or at least approximately zero.

7.2.1.2 CONTINUOUS SCALES:

Continuous scales are the outcome of the innate deficiencies under discrete scales. The results derived on the basis of these scales depend heavily on age classification adopted. It may so happen that the scales show leaps and bounds between two adjacent classes. Further, this method assumes that members at the bottom of the age-bracket behave in the same manner with respect to the consumption of a specific item as and when he attains the highest age in the same bracket. Singh and Nagar (1973) defined four age-groups for constructing the adult-equivalent scales namely children below 4 years, adolescent between 4 years and 15 years, adult males and adult females. It is very unlikely to postulate an adult male with 18 years of age behaving in the same manner with respect to the consumption of the ith item as he is at 30 years of age when he is more able to work or probably he is at the peak of his productivity. With change in age, a man's productivity changes and accordingly needs, tastes, preferences change. Therefore, the replacement of discrete scales by continuous scales yields more refined and realistic estimates of consumer unit-weights, as the latter method assumes the scales to vary continuously with the age of the members of each sex of the household.

Among the studies made on continuous equivalent-adult scales, noteworthy are the studies of Friedman (1952), Blokland and
Somermeyer (1970), Blokland (1976), Buse and Salathe (1978), Paul (1985, 1989). All of them assumed that the equivalent-weights are the functions of age and sex of the household members.

Friedman attempted to estimate the standard consumer scales by suggesting a parabolic scale function for the age group $(0 \leq a \leq 20)$ and a linear function for the remaining age ($a > 20$). For the purpose of estimation Friedman supposes that the relationship between expenditure on an item and income, both per unit consumer is linear. He criticised his own procedure by pointing out that income per unit consumer on a specific scale measures economic welfare. The subsequent contribution in this area, specially those due to Blokland and Somermeyer (1970), Blokland (1976), Buse and Salathe (1978) and Paul (1985, 1989) merit mention. Blokland and Somermeyer (1970) and Blokland (1976) suggested a cubic scale function for the age-group $(0 \leq a \leq 20)$ and a horizontal scale from the age of 20 onwards. Therefore, it is seen that there is the presence of an assumption of consumers' preferences, tastes and needs changing upto the age of 20 only and thereafter getting stagnated. Probably typical to Dutch consumers, all of them assumed a horizontal scale function for all consumers beyond the age of 20. Though Buse and Salathe agreed to a cubic scale function for the age-group $0 \leq a \leq 20$, improved upon the horizontal scale by considering a monotonic scale function for adults in the age-group $55 \leq a \leq 75$ and assuming constancy of equivalent values for adults in the age-groups $20 \leq a \leq 55$ and $a \geq 75$ separately. Thus, it is evident that none of these studies constructed
equivalent scales for the entire life. Therefore, by suggesting a definite scale function for a definite age-group, the very idea behind constructing continuous scales has been defeated.

Paul (1985, 1989) made an attempt to estimate equivalent scales for the entire life-time. His construction of the scale is based on the following simplifying assumptions:

(i) that, the scales for children are insensitive to sex differences upto $a = 19$ years of age,

(ii) that, the scales for children with age $a \leq 19$ be flexible enough to accommodate at most one maximum and one minimum

and (iii) that, the scales for adults with age $a \geq 19$ may decrease or increase but at a decreasing rate.

For estimating the consumer unit weights, Paul postulated a cubic scale function for children $(0 \leq a \leq 19)$ and an inverse function of age for males and females of age $a \geq 19$. A person of 19 years has been called by him the 'reference adult'. Paul claims to have specified life-time continuous scales - "the 'children' part of each scale is being represented by a cubic function and 'adults' part by an inverse function of age" (Paul, 1989, p.36).

7.2.1.3 AN EVALUATION OF THE METHODS:

In this section, an attempt is made to evaluate various methods described above to estimate consumer unit weights. Prais-Houthakker method suffers from the problem of identification of the parameters in that the number of parameters exceeds the number
of estimating equations. This made Forsyth (1960) and Cramer (1969) to conclude that in the absence of an extraneous information $w_{og} = 1$, the specific weights cannot be estimated in a cross-section. Their method gets criticised on the ground that the functional forms selected to represent Engel curve are arbitrary and therefore, final value of the unit weights may not reveal the true contribution of household members of different age and sex to the consumption of specific items.

Though Singh-Nagar method is criticised on the ground of its narrow assumption of equal weights to persons of different age belonging to a definite age-sex bracket, is defended on the ground of doing away with most of the short-comings under Prais-Houthakker method. The former allows for alternative specifications of Engel functions at subsequent iterations. These 'plausible forms' are selected on the naive formula that which explains maximum variation in the dependent variable. Moreover, in the absence of restrictions on estimating conditions of the type $0 \leq w_{ig} \leq 1$ and $\sum_{g=1}^{G} w_{ig} = 1$ (these are the restrictions under Singh-Nagar method), Prais-Houthakker procedure may result in certain absurd conclusions. Thus, Singh-Nagar method is a definite improvement over Prais-Houthakker formulation of the model to estimate consumer equivalent scales.

Between the methods of estimating continuous scales as given by Blokland and Paul, none can be held to be uniquely superior. Blokland's assumptions of consumption needs of growing
children varying monotonically till they attain a definite years of age and getting stagnated thereafter stand on a doubtful footing. The weights assigned to specific items of consumption at the peak of one's productivity have to differ from those assigned at retirement when he/she ceases to work. In a society where the joint family system is still in existence, the head of the household assumes the entire family responsibility. The pattern of consumption, when the head of the household has to meet the obligations of household members has to differ from that when he is almost free from such types of liabilities. Therefore, it is more plausible to assume that the pattern of consumption stabilises at retirement and after instead of at somewhere before retirement.

Paul constructed life-time scale under certain assumptions. Doubts persist as regards the suitability of the empty hypothesis that the scales for adults may increase (decrease) at a decreasing rate. This may be accepted for persons till they attain a definite years of age. An extremely old person becoming almost invalid has to live on the sympathy of others. In that case, his/her preference pattern is likely to get stabilised by the decision of the persons under whose charity and kindness he/she has to spend the rest of the life. This phenomenon happens to be common in a society where joint family system still exists and social security measures are extremely poor in their coverage. Extremely old and invalid persons are to be under the mercy or socalled duty of the younger generations. In rural segment of the Indian economy,
this phenomenon is quite common. With the progress of the society and accelerated development, the percentage of old people in total population is increasing. Neglect of their pattern of consumption leads to underestimation of actual consumer behaviour. Therefore, more plausible line of reasoning would be to hold a horizontal adult-scale after a definite age at old. Postulating a horizontal adult-scale much earlier (as it happens under Blokland's method) and a complete non-existence of such scale (as it happens under Paul's method) makes the efficiency of continuous scales suspect in the eyes of critics.

7.3 EMPIRICAL RESULTS:

The consumption pattern is influenced by the place of location and also by age-sex composition of households. Since the regional location of households is an important determinant of consumption pattern, we classify households accordingly. Two regions of Orissa viz. rural-Orissa and urban-Orissa have been taken for the analysis of consumer unit weights. Table-7.1 describes the percentage distribution of households, expenditure class wise over these two regions on the basis of the coverage of the 38th round of data collection from Orissa by the NSSO of India. Singh-Nagar (1973) iterative procedure has been applied to estimate consumer unit weights. The household members have been classified into three age-sex groups:

2. Group-II: Adult females above 14 years.
The iterative procedure converges rapidly in the case of both sectors. The number of iterations is seven for rural sector and ten for urban sector. The selection of the most 'plausible' form of the Engel function has been restricted to linear, loglinear and semilog forms. It is seen that no single functional form is the most plausible in the initial and final iterations. The results are given in Table-7.2. Under the assumption of differential preference patterns of the consumer households over different regions, a perusal of the results is made to show that the magnitudes of the individual consumer unit weights rightly vary for any specific item in the two sectors and for different items within the same sector.

7.3.1 ANALYSIS OF SPECIFIC SCALES:

Consumer unit weights have been computed for 13 individual commodities and 2 broad groups of commodities from the Singh-Nagar iterative procedure and the results are displayed in Table-7.2. The following is an explanation to the specific scales.

Rice is the principal constituent of total cereals. Adult males assume maximum weight for cereals in urban area and it is maximum for adult females in rural area. The latter weight pattern is quite obvious. In rural region, rice is frequently used as a substitute of more nutritious items of consumption for economic reasons. Watered rice is quite favourite of the women of rural households in general and the households who put women into work in particular. During the period of slackening agricultural activities when the rural labour class suffers from meagre income, watered rice is considered to be the regular item of consumption.
While adult males in urban area assume maximum weight, children in rural area assume maximum weight for the consumption of cereal substitutes. Children assuming maximum weight in rural area does not imply that they necessarily consumer a lot of inferior cereals. Instead it should be interpreted as meaning that the addition of a child to rural households increases their consumption of inferior cereals and reduces that of rice and its other costlier substitutes possibly for economic reasons.

Pulses are considered cheapest of all possible sources of proteins. It is also considered to be next to cereals as a source of calories (Sukhatme, 1965). Pulses are taken as a regular item of consumption by urban households as these households are quite conscious about the nutritive values of food items. Pulses are used by the rural households who cannot afford to purchase meat, or fish or high quality vegetables or who donot consume non-vegetarian items due to religious beliefs and social customs. In rural area, the consumer unit weight is the highest for adult males while it is highest for adult females in urban area in regard to the consumption of pulses. Though the weight is the least for children in both the regions, it is higher in rural area than that in urban area. Mothers use pulses to feed the growing children in rural area as they cannot afford more nutritious foods for their children due to inadequate perunit household income. In urban area better substitutes are affordable and thus for feeding children pulses are not so much emphasised.
Milk and milk products is a rich diet. To a great extent it is an important item of consumption for children, ailing persons and expectant mothers. In rural Orissa, milk is generally a home-grown item of consumption. Though adult females account for highest weight with respect to its consumption in rural area, children assume higher weight than an adult male. The latter weight structure is quite obvious. But the former does not seem realistic. This may be attributed to reporting errors as this item is generally home-grown in rural area. In urban Orissa, adult males assume maximum weight in the consumption of milk and milk products.

In respect of the consumption of edible oil, the rural population assume higher weights than the corresponding urban population. In rural area children assume higher weight next to adult females. It does not imply that children consume a lot of edible oil. It may be interpreted as meaning that with an increase in the number of children in a family, expenditure is diverted to other items of consumption which are essential for feeding the children. Adult females assume maximum weight in rural area which is higher than that assumed by urban females. Edible oil includes coconut oil. Coconut oil is not used as a cooking medium in Orissa. It is mostly used by the rural females for toilet. Urban females can afford varieties and better substitutes of coconut oil for toilet and therefore do not assume higher weight than the rural counterpart.

Meat, egg and fish is a common item of consumption in Orissa. But fish is more popular. In both the sectors, adult males
assume maximum weight in its consumption. Urban children assume
higher weight than their counterparts in rural area. A comparison
of weights assigned to adult females shows a high degree of incompati-
tibility. This may be assumed to be the result of reporting errors.

High consumer weights for all categories of household members
in both the sectors indicate a strong preference for vegetables
all over Orissa. Adult females and children in rural area assume
higher weights for vegetables than those of adult females and
children in urban area respectively. Rural women are more tradition
bound and religious than urban women as modernisation seldom reaches
the former group. Therefore, most part of women population in
rural area does not consume non-vegetarian items. Moreover, weaker
religious restrictions and higher prices of vegetables in the urban
sector further contribute to the weight pattern. It is evident that
rural children consume more vegetables than the urban children.
Due to large scale poverty and irregular flow of income in rural
area, families cannot afford more costly and high quality commodities
to feed their children which is unlikely to happen in urban sector.

While in rural Orissa children assume maximum weight for
fruits and nuts, adult males assume maximum weight in urban Orissa.
The weight pattern seems inappropriate in view of its assigning
higher weight to rural children than that estimated for urban
children. But it will not cause perplexity in drawing inference
as these items are generally home-grown in rural area in which
children claim a major share.
In the consumption of sugar, adult females in both the regions account for highest weight. This may be due to a stronger preference for sugar by adult females in both rural and urban Orissa.

The pattern of weights assigned to three age-sex groups with respect to the consumption of salt, spices and beverages shows that adult females in rural area and adult males in urban area claim the highest weight. But the weight pattern in rural area is although above that in urban area. The latter phenomenon is indicative of a stronger preference for salt, spices and beverages in rural area than that in urban area. Urban people are more health conscious and thus restrict the consumption of spices.

For pan, tobacco and intoxicants, adult males in both the sectors account for the highest weight. But rural women claim higher weight in the consumption of the item than urban adult females. In rural area chewing pan is quite common with adult females. As pan masala constitutes the principal part of pan, tobacco and intoxicants in rural area, the weight structure seems to be appropriate.

For clothing, the consumer unit weight is the highest for adult females in rural area. But in urban area it is the highest for children. It does not mean that rural adult females are better off in terms of the consumption of clothing. Due to scanty income of rural households and high price of clothing, the expenditure on women wear claims a substantial share in total household
expenditure on non-food items of consumption. Similar line of explanation is applicable to the weight pattern relevant for the consumption of other non-food items.

7.3.2 ANALYSIS OF INCOME/TOTAL EXPENDITURE SCALES:

In Table-7.2, consumer unit weights for total expenditure (income) are given under \( \omega_{og} \). These weights are although higher in rural Orissa than their corresponding weights in urban Orissa. It will be a clear misinterpretation of facts if on the basis of the values of weights one derives the conclusion that rural adult females and children are better off than their counterparts in the urban area. Rural households are generally men dominated households with them as the heads of families. Old tradition and values are still wide-spread in rural area. The head of the household instead of looking into his own well-being looks into the well-being of all the members of the household. Satisfaction of others preference takes precedence over the satisfaction of the head's preference. Since the capacity to spend is limited and the satisfaction of others immediate needs is given priority, rural women and children claim a substantial share in total household expenditure. Thus, the pattern of total expenditure/income weights in rural area is a clear indication of lower level of living standard prevailing in the rural sector of the Orissa economy.

7.4 SUMMARY AND CONCLUSION:

This chapter is given up wholly to explain the effects of family composition on the pattern of consumption. Various methods...
of computing consumer unit weights have been reviewed at the outset. Economic scales are shown to be more appropriate in the context of empirical analysis of family budgets than the normative scales. Though continuous adult-equivalent scales look realistic, its construction is surrounded by dubious assumptions and that the conclusions so derived will be unreliable. From among the methods to construct discontinuous equivalent scales, Singh-Nagar iterative procedure is seen to be most suitable in the present context. Accordingly, the weights have been estimated for rural-Orissa and urban-Orissa taken separately. An evaluation of the weights reveals that urban households are better off in terms of level of living standard than their rural counterparts.

One of the defects with the above analysis is that children from 0 to 14 years of age have been included under one age-sex group. Breaking this group into children and adolescent might have improved upon the conclusion. This could not be done as expenditure data are not available separately for these two age-sex groups.
TABLE - 7.1
EXPENDITURE-CLASS WISE DISTRIBUTION OF SAMPLE HOUSEHOLDS IN RURAL AND URBAN ORISSA - 38TH ROUND OF NSS.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Expenditure Classes (in Rs.)</th>
<th>Number of Households</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>0-30</td>
<td></td>
<td>39</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.28)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>2</td>
<td>30-40</td>
<td></td>
<td>107</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(3.50)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>3</td>
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<td>(6.28)</td>
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<td>(2.08)</td>
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<td></td>
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<td>(4.05)</td>
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<td>(15.45)</td>
<td>(8.53)</td>
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<td></td>
<td>(14.23)</td>
<td>(9.63)</td>
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<td>143</td>
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<td>(15.65)</td>
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<td></td>
<td></td>
<td>(9.69)</td>
<td>(14.00)</td>
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<tr>
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<td></td>
<td>(8.90)</td>
<td>(14.88)</td>
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<td>(2.75)</td>
<td>(9.41)</td>
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<tr>
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<td></td>
<td></td>
<td>(0.75)</td>
<td>(6.78)</td>
</tr>
<tr>
<td>13</td>
<td>300-above</td>
<td></td>
<td>63</td>
<td>122</td>
</tr>
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<td></td>
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<td></td>
<td>(2.06)</td>
<td>(13.35)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
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<td>3,056</td>
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(100)  (100)

Figures within parantheses indicate percentage of the total.
TABLE - 7.2
ITEMWISE ESTIMATES OF SPECIFIC AND INCOME SCALES

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items of Expenditure</th>
<th>Rural - Orissa</th>
<th>Urban - Orissa</th>
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<td></td>
<td></td>
<td>( w_{i1} )</td>
<td>( w_{i2} )</td>
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<tr>
<td>1</td>
<td>Cereals</td>
<td>1.122</td>
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<td>Cereal Substitutes</td>
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<td>3</td>
<td>Pulses</td>
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<td>0.638</td>
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<td>4</td>
<td>Milk and Milk Products</td>
<td>1.677</td>
<td>1.630</td>
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<tr>
<td>5</td>
<td>Edible Oil</td>
<td>1.651</td>
<td>0.955</td>
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<td>6</td>
<td>Meat, Egg and Fish</td>
<td>0.951</td>
<td>0.254</td>
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<tr>
<td>7</td>
<td>Vegetables</td>
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<td>1.025</td>
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<td>Fruits and Nuts</td>
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<td>Sugar</td>
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<td>1.211</td>
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<td>Salt, Spices &amp; Beverages</td>
<td>4.985</td>
<td>0.391</td>
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<td>Total Food (1-10)</td>
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<tr>
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<td>Pan, Tobacco &amp; Intoxicants</td>
<td>0.753</td>
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<td>Clothing</td>
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<td>Other Non-Food Items</td>
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<td>Non-Food (12-14)</td>
<td>2.333</td>
<td>1.885</td>
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</tbody>
</table>

\( w_{og} \) (1-10 and 12-14)  
\( w'_{og} \) (11 and 15)

AWHS : Average Weighted Household Size.