Household Expenditure in Jaffna and Mannar Districts: Modelling in Urban and Rural Sectors

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INTRODUCTION

Household is defined as one or a group of persons living together and having common arrangements for food and other essentials of living. They may be related or unrelated persons or combination of both. They are however expected to pool their income and have a common budget to some extent, if not totally. Living standards of households are considered to be the main factors measuring the socio - economic condition of a community. Standard of living of households could be measured by their income and expenditure. In the selection of a suitable framework for the measurements of living standards, consumption or expenditure rather than income has been accepted as the better measure.

The household expenditure pattern being dependent and increasing with family size or family composition, is confirmed through survey data, although the form of relationship has not been studied. There is evidence to show that the number of employed members in the household and their total income and other members of the household are the main factors greatly influencing the household expenditure. There are some other factors such as number of dependents, who mainly depend on the income from the employed members, small children (below five years of age) and other school going children who are also affecting the household expenditure to some extent. The dependence of these factors on expenditure generally varies from household to household again depending on the household composition. Characteristics of the household and their relationship are to be analysed in order to study the expenditure distribution.

The motivation of this study is to compare the rural and urban sectors in Jaffna and Mannar districts (Figure 1). Further this study leads to find a suitable model to explain the relationship of household expenditure with household income, number of dependents, number of employed members and number of school going children. Jaffna and Mannar districts are selected, by considering some special features. Jaffna district is considered to be comparatively developed, whereas Mannar district is relatively backward. Both districts have urban and rural sectors. Average population densities are 385 and 53 persons per square kilometre and the percentages of the population in the urban areas are 32·6 and 13·1 in Jaffna and Mannar districts respectively (Census of population & Housing – 1981).

The following table describes some information about the study area;

Table 1. Some information about the study area :

	Jaffna	Mannar	Sri Lanka
Population	8,32,552	1,06,235	14,846,750
Sex ratio (Male: Female)	1000 : 988	1000 : 1146	1000 : 1040
Literacy (%)	93.40	86.80	86.50
Unemployed (%)	14.20	5.00	17.90
School going Children (%)			
10 – 14 Years	85.10	67.60	82.70
15 – 19 Years	50.80	25.60	42.10

(Source : Census of Population and Housing — 1981.)

MATERIALS

The data required in this study for the expenditure of household have been obtained from Labour force and Socio–Economic survey – 1985/86 conducted by the Department of Census and Statistics. The field work of the Department of Census and Statistics to obtain the said data was carried out from April 1985 to March 1986. The survey provides comprehensive information on labour force characteristics, income and expenditure and additional background information on demographic characteristics of the population.

Survey Coverage and Design

The above said survey covered all the districts in Sri Lanka, and it had been designed to give estimates for rural, urban and estate sectors at district and island level. A representative sample of 2,075 households was selected in this survey.

Two stage sampling design was adopted in this survey. The primary sampling or first stage sampling units (FSSU) were census blocks (Based on the census of population and housing 1981) and the secondary sampling or second stage sampling units (SSSU) were the housing units. The alocation of FSSU to each strata was designed to produce estimates of acceptable reliability. FSSU were selected by the Probability Propotional to Size (PPS) sampling (Size being the number of housing units in each FSSU) with replacement. From each selected FSSU ten housing units (SSSU) were selected using systematic sampling method.

An important feature of this sampling design is that it gives an even spread of sample throughout the year, which makes the results representative of the entire year. This is specially important because all three major subjects; labour force, income and expenditure, covered in this survey are affected by seasonal or other influences.

Nature of Data

The independent variables used from each of the household in constructing the models for household expenditure in this study are as follows:

1. Household income,
2. Number of employed persons,
3. Number of dependents,
4. Number of children below 5 years old,
5. Number of school going children below GCE (A/L),
6. Number of adults studying GCE (A/L) and over.

Most of the surveys have experienced that obtaining reliable information on income is a delicate task. The household members are reluctant to reveal their actual income due to various reasons. As such, as a device of improving the reliability of the household income data, it was decided to obtain the information on household income in the following manner;

(a) Monthly income from employments,
(b) Monthly income from other cash receipts,
(c) Monthly income received in kind,
(d) Monthly income from agricultural activities,
(e) Monthly income from non-agricultural activities,
(f) Monthly rental value of the owner occupied house.

Total of the above various income from all the members of the household is defined to be the household income per month.

The household expenditure is estimated as the sum of monthly estimated expenditure on various item groups. It is broadly categorised as consumption expenditure and non-consumption expenditure. The following are the major components on which the household expenditure was collected.

(a) Food,
(b) Drink & Tobacco,
(c) Housing,
(d) Fuel & Light,
(e) Non-durable goods,
(f) Clothings,
(g) Services,
(h) Personal care,
(i) Health expenses,
(j) Transport,
(k) Communication,
(l) Recreation,
(m) Education,
(n) Cultural activity,
(o) Miscellaneous consumption,
(p) Consumer durables,
(q) Non-consumption expenditure.

METHODS

In this study about 200 household information were extracted in respect of Jaffna and Mannar districts from the Sri Lankan sample of size 2075 from the Labour force and Socio – Economic Survey 1985/86.

Limitations

Generally income – expenditure surveys are subjected to limitations as there is a tendency to underestimate income unrevealed non - regular income such as foreign remittances, interests, rents and gifts, etc., and over estimate the expenditure. In view of these limitations, the data on income and expenditure may be distorted from the true figure.

However, using clever enumerators and method of approach of data collection, reliable information could be collected. For example, asking the household expenditure first and find the ways of financing these expenses and matching their income.

For this study, the data of Jaffna and Mannar districts were taken for analysis. Considering the population in these districts 200 household information are extracted. Following table describes the nature of sample taken for analysis.

Table 2. Details about the sample taken for this study.

Sector / District	Urban	Rural	Total
Jaffna	80	40	120
Mannar	30	50	80
Total	110	90	200

Analysis

Preliminary analysis is carried out to study the behaviours of the selected variables in order to form a relationship of household expenditure. Chi-square test of significance has been applied for testing the independence between the factors concerned.

The co-relation co-efficients between household expenditure and various factors influencing it have been calculated separately at sectoral and district levels. The variables introduced are as follows;

Y – Household expenditure,

X1 – Household income,

X2 – Number of employed members,

X3 – Number of dependents,

X4 – Number of children below 5 years of age,

X5 – Number of school going children below G. C. E. (A/L),

X6 – Number of school (G. C. E. (A/L)) and other institution going children.

The multiple linear regression technique was utilized to explore the functional relationship, supposed to be linear, of household expenditure (Y) on the factors listed above. ie, X1 to X6. The 'INSTAT' statistical package was used for the calculations. Different models at sectoral and district levels have been constructed by estimating the parameters from available data.

The general form of the model is expressed as;

$$Y = a + b1.\ X1 + b2.\ X2 + b3.\ X3 + b4.\ X4 + b5.\ X5 + b6.\ X6$$

The stepwise regression technique was adopted for the calculations of estimating parameters a, b1, ... , b6. In this approach the multiple regression equation is achieved by systematically adding terms, one at a time to include in the regression equation only those terms that contribute significantly to the variation in the dependent variables. Since the validity of a fitted model depends on the patterns of the residuals, the residual analysis was done.

RESULTS AND DISCUSSIONS

Test of independence

The household expenditure and income data of the two classifications, urban and rural sectors within a district are to be tested to know whether there is a significant association between them. In other words whether the expenditure patterns in urban are different or not from rural sector. Test is carried out commonly for both districts.

The hypothesis that the urban and rural sectors are independent in household expenditure, is tested. The details are given below;

Table 3 : Test of independence between urban and rural sectors for household expenditure.

Expenditure Groups (in Rs)	Observed number of households		Expected number of households		Total
	Urban	Rural	Urban	Rural	
Below 800	08	13	11.55	09.45	21
800 –< 1000	08	17	13.75	11.25	25
1000 –< 1500	41	32	40.15	32.85	73
1500 –< 2000	27	16	23.65	19.35	43
2000 –< 2500	11	08	10.45	08.55	19
2500 & above	15	04	10.45	08.55	19
Total	110	90	110.00	90.00	200

Computed value of the test statistic and degrees of freedom are 13.33 and 5 respectively. Theoretical chi – square value at 1% level of significance is 15.09. Therefore, the observed test value is not significant. Therefore we accept the hypothesis that the expenditure distribution in urban and rural sectors are independent. This indicates that the expenditure patterns in urban sector could be different from rural scctor.

It is generally observed that the sectoral level expenditure patterns vary to a greater extent in the urban sector with increased income compared to the rural sector. Food expenditure as a percentage of total expenditure is highest in rural sector and/lowest in urban sector. But the value of the expenses is greatly high in urban sector where all commodities are expensive and depend on rural areas for most of the agricultural products. Consumption of self – produced goods play an important role in rural areas and thereby the consumption expenditure is reduced.

The non–food expenditure such as housing, clothing, fuel and light, transport and education is most significant in urban sector, whereas in rural sector it is not so. The rural sector spent on medical treatment least. But the greater use of Western drugs and private medical practitioners are expected to be high in urban sector. All the above reasons make the interdifferential of expenditure patterns in urban and rural sectors further stronger.

The hypothesis that the urban and rural sectors are independent in household income, is tested. The details are given below;

Table 4 : Test of independence between urban and rural sectors for household income.

Income Groups (in Rs)	Observed number of households		Expected number of households		Total
	Urban	Rural	Urban	Rural	
Below 800	06	08	07.70	06.30	14
800 –< 1000	09	16	13.75	11.25	25
1000 –< 1500	31	28	32.45	26.55	59
1500 –< 2000	27	28	30.25	24.75	55
2000 –< 2500	10	07	09.35	07.65	17
2500 & above	27	03	16.50	13.50	30
Total	110	90	110.00	90.00	200

Computed value of the test statistic and degrees of freedom are 20.21 and 5 respectively. Theoretical chi-square value remains same and it is 15.09 at 1% level of significanee. Therefore, the observed test value is significant. Hence, we reject the hypothesis that the income distribution in urban and rural sectors are independent. This indicates that the income patterns in urban sector are dependent on the rural sector and vice-versa. In other words, there is no strong evidence to say that the income pattern in urban sector is quite different from rural sector.

It is observed that about more than 50% of the households in urban sector in Jaffna district are falling in the expenditure group of Rs. 1500 or less and their corresponding income group reported to be Rs. 2000 or less. Similarly, in rural sector and district level of Jaffna, the percentage of households which are falling in the expenditure and income groups as in urban sector, is lowest in rural sector. The seperate histograms corresponding to rural, urban and district level for both Jaffna and Mannar districts will highlight these information.

Household income and Expenditure

Groupwise contingency table for both income and expenditure is given below:

Table 5 : Income and Expenditure distribution of the sample.

Income Groups (in Rs)	Expenditure Groups (in Rs)					
	Below 800	800– <1000	1000– <1500	1500– <2000	2000– <2500	2500– Above
Below 800	10	02	02	—	—	—
800 –< 1000	06	09	10	—	—	—
1000 –< 1500	04	14	33	06	01	01
1500 –< 2000	—	—	21	31	03	—
2000 –< 2500	01	—	02	04	07	03
2500 — Above	—	—	05	02	08	15

It is observed that about 45% of households fall in the income group of less than Rs. 1500 and matching their expenditure in the same group, about 16% of the households to be observed in the income group of Rs. 2000 and above, and meeting their expenses in that limit. It is observed that some of the households expenditure reported to be higher than their total income. This may be attributed to their unavoidable expenses such as wedding, funeral, medical and other expenses. The above table clearly indicates that the income of a household is going to be a major factor affecting the expenditure pattern most.

Correlations

The correlation co-efficients between household expenditure and various factors influencing them have been given separately in the following tables:

Table 6: Correlation co-efficients at district-sectoral level

	Jaffna			Mannar		
Factors	Urban	Rural	District	Urban	Rural	District
X1	0.8581	0.8637	0.8628	0.8479	0.7921	0.8091
X2	0.6034	0.0943	0.4846	0.0670	0.4021	0.2181
X3	0.5086	0.3146	0.4594	0.0760	0.2580	0.2154
X4	- 0.1650	- 0.0065	- 0.1352	0.0388	-0.0547	0.0658
X5	0.2125	0.1293	0.1976	0.1647	0,6965	0.4015
X6	0.4276	0.2002	0.3805	0.2863	———	0.3432

The household income (X1) exhibits a high correlation with expenditure than the other variables which are true for both urban and rural sectors and also true for both districts. This co-efficient is 0.86 and 0.81 for Jaffna and Mannar districts respectively and this explains 74% and 65% linear variation.

The significant feature in the Jaffna district is that the effect on expenditure by employed members (X2) and dependent members (X3) explained about 25% linear variation, while in the Mannar district is only 04%. Similarly the factors school going children below GCE (A/L) (X5) and GCE (A/L) and above (X6) are making the household to bear more expenses in the Mannar district than in the Jaffna district. This indicates that households in the Mannar district have to find out some ways to meet their expenses on schooling of their children.

The effect by Dependent members is reported to be high in urban sectors than in rural sectors. This indicates that more un – employed persons exist in urban sector. Other significant feature is that the variable number of children below 5 yrs. of age (X4) has very low correlation compared to other factors. This indicates that the effect of household expenditure by this variable is likely to be little.

Regression analysis

The stepwise regression calculations, estimation of parameters, analysis of variance tables (ANOVA) and models are given below for sectors and districts separately;

'. Model for urban sector in Jaffna.

The variables to be included in the regression equation for urban sector in the Jaffna district are; X1, X2, X3, X4, X5 & X6. Simple correlation co-efficient between expenditure and each of the independent variables to enter the regression equation with having the highest value which is significant at a specified level of significance. The 5% level of significane is considered in this paper.

The largest correlation 0. 8581, exhibited by X1, which is significant at 5% level of significance. Thus X1 enters first in the regression equation. The co - efficient of determination corresponding to each of the rest regression equations and the t – value for testing significance of the regression co - efficients corresponding to each of the remaining five variables are computed to find the second variable to be entered in the model.

Table 7 : Stepwise regression calculations for Urban - Jaffna.

Variable	X 2	X 3	X 4	X 5	X 6
Second, C. o. det.	0.7516	0.7805	0.7411	0.7843	0.7539
t-value	2.17	3.93	–1.18	4.13*	2.34
Third, C. o. det.	0.7946	0.8205	0.7894	—	0.7949
t-value	1.96	3.92*	–1.36	—	1.98
Fourth, C. o. det.	0.8272	—	0.8217	—	0.8275
t-value	1.70	—	–0.71	—	1.75

(* – Significant at 5% level of significance.)

The largest value of the co - efficient of determination is exhibited by X5 whose regression co - efficient is significant at 5·/. level of significance. Thus X5 is the second variable entering the regression equation. The co-efficient of determination corresponding to each of four remaining variables are computed to find out the third variable to be entered in the model.

The largest co - efficient of detemination is exhibited by X3 whose regression co - efficient is significant at 5·/. level of significance. Thus X3 is the third variable entering in the model. The co - efficient and t-value corresponding to each of the three remaining variables are computed. Each regression equation has four independent variables, three of which are X1, X3 and X5 and the fourth is each of the remaining three variables. Because none of the regression co – efficients associated with ihe fourth varible is significant at 5·/. level, the process is terminated. Thus, the regression equation that should be used is one that consists of the three variables X1, X3 and X5. The equation which explains 82./· of the total variation is expressed as,

$$Y = 168.85 + 0{,}6214\ X1 + 112.94\ X3 + 114.84\ X5$$

The estimation of parameters and the analysis of variance table for the above fit are given in the following tables,

Table 8 : Estimation of parameters for the Jaffna-urban model.

Parameters	Estimate	Std. Er.	t-value
a	168.85	84.207	2.01
b1	0.6214	0.0413	15.02
b3	112.94	28.829	3.92
b5	114.84	27.898	4.12

Table 9 : ANOVA table for the model of Jaffna-urban sector.

Source	d. f.	S. S.	M. S.	F–value
Regression	3	3.09545 E7	1.03182 E7	115.813
Residual	76	6.77108 E6	89093 . 2	
Total	79	3.77256 E7	Co-efft. of det .	0. 8205

2. Model for rural sector in Jaffna.

The variable X1 has the highest correlation co–efficient with Y, among other X Variables, and thereby the first X variable to enter the regression equation is X1. The second variable to be entered in the model is examined.

Table 10: Stepwise regression calculations for Rural - Jaffna

Variable	X 2	X 3	X 4	X 5	X 6
Second, C. o. det.	0.7460	0.8011	0.7462	0.7627	0.7479
t–value	–0.14	3.20*	–0.21	1.62	0.54
Third, C. o. det.	0.8011	—	0.8014	0.8172	0.8014
t–value	0.08	—	0.23	1.78	0.26

The largest co–efficient of determination is exhibited by X3, whose regression co-efficient is significant at the 5·/. level of significance. Thus X3 is the second variable to be entered in the regression. equation. The co–efficient of determination to each of four regression equations and the t–value for testing significance of the regression co-efficient to each of the remaining four variables are computed to find out the third variable. Each regression equation has three independent variables two of which are X1 and X3 and the third is each of the remaining four variables.

Because none of the regression co–efficients associated with the third variable is significant at 5·/. level; the process is terminated. The regression equation which explains 80·/. of the total variation is given as;

$$Y = -8.8879 + 0.7922\ X1 + 110.26\ X3$$

Table 11: Estimation of parameters for the Jaffna-rural model.

Parameters	Estimate	Std .Error	t–value
a	–8.8879	114.84	–0.08
b 1	0.7922	0.0693	11.43
b 3	110.26	34.424	3.20

Table 12 : ANOVA table for the model of Jaffna-Rural sector.

Source	d. f.	S. S.	M. S.	F - value
Regression	2	8.39989 E6	4.19994 E6	74.491
Residual	37	2.08613 E6	56381 . 9	
Total	39	1.04860 E7	Co-efft. of det.	0.8011

3. Model for urban sector in Mannar.

Among the X variable, the variable X1 exhibits the highest correlation co-efficient with Y, and thereby the first X variable to enter the regression equation is X1. The second variable to be entered in the model is then examined.

Table 13 : Stepwise regression calculations for Urban-Mannar.

Variable	X2	X3	X4	X5	X6
Second, C. o. det.	0.7267	0.7779	0.7229	0.7374	0.7451
t-value	0.87	2.66*	-0.62	1.37	1.66
Third, C. o. det.	0.7818	—	0.7809	0.7869	0.8031
t-value	-0.72	—	-0.64	1.07	1.84*
Fourth, C. o. det.	0.8067	—	0.8053	0.8079	—
t-value	-0.68	—	-0.54	0.79	—

The largest co-efficient of determination is exhibited by X3, whose regression co-efficient is significant at 5% level. Thus X3, is the variable to be entered in the regression. The next largest co-efficient of determination is exhibited by X6 whose regression co-efficient is not significant at 5% level, but it is closer to that value, and significant at 10% level. The level of significance is generally recommended between 5% and 10%. Thus X6 is the variable to be entered in the regression equation. The determination value and t-value corresponding to each of the three remaining variables are computed and examined. Each regression equation has four independent variables, three of which are X1, X3 and X6 and the fourth is each of the remaining three X variables.

Because none of the regression co-efficients associated with the fourth variable is significant at 5% level (even at the 10% level, the process is terminated. Thus, the regression equation that should be used is one that consists of the three variable X1, X3 and X6. The fitted regression equation which explains 80.3 of the total variation is;

$$Y = 345.11 + 0.3878\ X1 + 156.5\ X3 + 290.71\ X6$$

Table 14 : Estimation of parameters for the Mannar-urban model.

Parameters	Estimate	Std. Error	t - value
a	345.11	187.95	1.84
b1	0.3878	0.0399	9.71
b3	156.50	56.553	2.77
b6	290.71	157.99	1.84

Table 15 : ANOVA table for the model of Mannar-Urban sector.

Source	d. f.	S. S.	M. S.	F-value
Regression	3	1.63015 E7	5.43383 E6	35.344
Residual	26	3.99724 E6	153740	
Total	29	2.02987 E7	Co-efft. of det.	0.8031

4. Model for rural sector in Mannar.

Among the X variables, X1 exhibits the largest correlation 0.7921 with Y, and thereby the first variable to be entered in the regression equation is X1. The entry of second variable is examined.

Table 16 : Stepwise regression calculations for Rural-Mannar.

Variable		X2	X3	X4	X5
Second,	C.o. det.	0.6304	0.6294	0.6296	0.7334
	t-value	0.62	0.50	−0.53	4.32*
Third,	C.o. det.	0.7455	0.7349	0.7343	—
	t-value	1.48	−0·51	−0.39	—

The largest determination value is exhibited by X5, whose regression co-efficient is significant at 5·/. level of significance. Thus X5 enters the equation. It was observed that X6 is not appeared in the data set for rural sector in Mannar district and thus it has no chance to enter in the model. The determination and t values corresponding to each of the remaining variable are computed and examined. Each regression has three independent variables, two of which are X1 and X5, and the third is each of the remaining three X variables.

Because none of the regression co-efficients examined with the third variable is significant at 5·/. level, the process is terminated. Thus, the regression equation which explains the 73.3·/. of the total variation is;

$$Y = 221.55 + 0.6212\ X1 + 143\ X5$$

Table 17 : Estimation of parameters for the Mannar-rural model.

Parameters	Estimate	Std. Error	t-value
a	221.55	121.32	1.83
b1	0.6212	0.0939	6.62
b5	143.00	33.068	4.32

Table 18 : ANOVA table for the model of Mannar-Rural sector.

Source	d. f.	S. S.	M. S.	F–value
Regression	2	1.12181 E7	5.60904 E6	64.658
Residual	47	4.07724 E6	86749. 8	
Total	49	1.52953 E7	Co-efft. of det.	0.7334

Validity of the models

It can be seen from the above ANOVA tables (Tables 9, 12, 15, 18) that F-ratios of the regression models are largely in excess to the critical F-ratio at 5% level of significance. This indicates the significance of explanatory variables in the models. The most explanatory variables in all models are household income, number of dependent persons in the household and the number of school going children specially below G. C. E. (A/L).

The residuals were plotted against fitted values to examine the residual pattern. It was observed that the plots formed a horizontal band for all the models which indicate no abnormality in the scatter is possible. Further the residuals were examined for normality of their distributions. In all the graphs the plots were observed very close to a straight line and implied the residuals are asymptotically distributed as normal distribution.

It is also revealed from the above calculations that the factors affecting the household expenditure have different patterns in urban and rural sectors and even in district levels. It is observed that the same factors which are household income and number of dependent persons are seen in forming a relationship in urban and rural sectors in the Jaffna district, but urban sector has one more factor which is number of school going children below G. C. E. (AL). This indicates that the education expenditure is expected to be high in urban sector. In other words the number of school going children are more in urban sector than in rural sector, and implied that urban population in this region is more educated than in rural sector. Similar patterns were observed in Mannar district.

The models obtained for districts by pooling sectoral data which were not given in the text of this paper are given below. The models for Jaffna and Mannar districts which explain 83·/., 77·/. respectively are as follows:

$$Y = 120.91 + 0.6351\ X1 + 103.35\ X3 + 103.02\ X5 + 116.66\ X6.$$

$$Y = 312.60 + 0.3899\ X1 + 94.693\ X2 + 68.945\ X3 + 125.14\ X5.$$

CONCLUSIONS AND REMARKS

The analysis of data at district and sectoral level has revealed the behaviour of the household expenditure. In all the models, among the factors which were examined, it was found that the factor influencing the household expenditure most was the household income. In all the cases, it was found that more than 60·/. of the expenditure could be explained by the variation in income. The number of dependents and the number of school going children below G. C. E. (A/L) in household were also observed to be influencing the household expenditure. When household income is already in the model, the above said factors together explained around 10·/. of the variation in household expenditure.

It has been observed that there is a close relationship between number of dependents and the household expenditure. The unemployed persons among dependents in the household is a factor contributing to increase the household

expenditure to a considerable extent. It was observed that the higher number of dependents in a household causes a high household expenditure. Further, if the household income is very low (or less employed persons and more dependents in the household, then the effect of these factors on household expenditure could be very high. Similarly, the effect of school going children on household expenditure was observed to be high. Despite free education system, household have to spend a considerable amount of money on cloth, books, transportation and other needs of school going children.

It was observed that the models obtained for district-sectoral level were different and also included different factors. The different models obtained were given in the text. The effect of the expenses for higher education was reflected in the Jaffna district. The Jaffna district is comparatively more developed than the Mannar district. The availability of educational facilities such as, private schools, tution centres, higher educational institutions etc. in the Jaffna district are reported to be utilised by the people and these facilities are supposed to be motivating the people in this district incurring more expenses on their children's educations. Similar results were also observed in the urban sectors of both districts.

It was also noted that the affecting factors of the rural sectors in both districts are household income and the number of school going children below G.C.E. (A/L). It indicates that households have to spend a considerable amount of money for education in rural areas where the educational facilities are very poor and households are incurring their expenses when their children are attending the schools. The factor-number of dependents which affects on expenditure in rural sector was found to be very smaller than in the urban sector. This may be due to the high rate of un-employment in urban sector and low rate in the rural sector, where most of the dependents are atleast engaged in self-employment.

Hence, it can be observed that modelling at sectoral level is not more advantageous than modelling at district level. Because the amount of variation explained by the models at district level and sectoral level are more or less same. The reason may be that even within the sector there is a mixture of rich, middle and poor class households.

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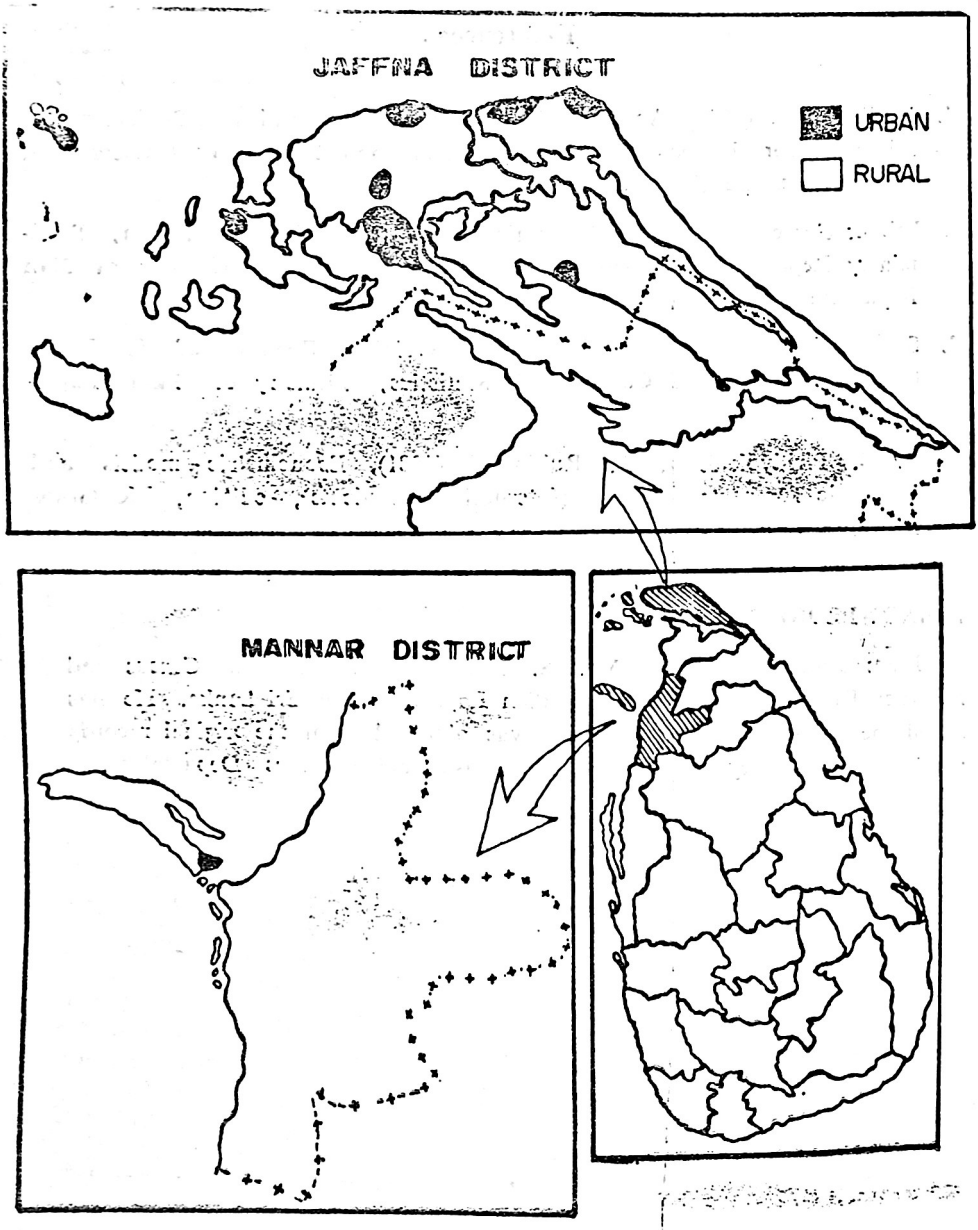

FIG. I URBAN - RURAL SECTORS IN JAFFNA AND MANNAR DISTRICT.