

Status of Poverty in Sri Lanka: In a Perspective of Headship

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Abstract

The gender aspect of poverty in Sri Lanka is an important area to formulate better policies to empower the status of women and to alleviate poverty status by household level in Sri Lanka. This study examines the impact of poverty levels in relation to change in headship from male to female to understand whether female headed households contribute disproportionately to overall poverty in Sri Lanka. The study used the Household Income and Expenditure Survey of 2001/02 that covered 16,924 households (71,293 individuals) in seven provinces in Sri Lanka. This study identified the poor by the Sri Lankan official poverty line which is calculated by the Department of Census and Statistics, Sri Lanka. The logit model was applied to measure the effect of poverty on changing the age, family size, income, level of education and the headship. The findings reflect some facts which merit careful attention in the task of Sri Lankan poverty alleviation policies. The results suggest that poverty and female headship are strongly linked in the estate sector. Finally, predicted logit values suggest that Monaragala and Ratnapura are the districts which are relatively deprived by having a high probability of poverty for female headed households.

Keywords : Economics of Gender, Poverty, Logit Model

JEL Codes : J16, I3, C5

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1. Introduction

In the global context, it is frequently asserted that 70 per cent of the world's poor are women (UNDP, 1997). As noted in the World Bank (2001), by the year 2000, the world population was over 6 billion. Among them 2.8 billion could not achieve the income level of two dollars per day and 1.2 billion could not achieve even one dollar per day. Geographical distribution of the world population showed that 2 per cent, amounting to 127 million persons, live in Central Asia, and another 22 per cent amounting to 1353 million persons, live in South Asian countries. However, the majority of the people (44 per cent) could not achieve more than one dollar per day in South Asia.

Compared with the other regions, the highest proportion of Female Headed Households (FHHs) is in South Asia. (De Silva, 2003). Around 20.4 per cent of the households in Sri Lanka are female headed (Department of Census and Statistics, 2000). FHHs have been singled out in development policy research as one of the key groups to which poverty amelioration policies should be aimed. On the other hand, Sri Lanka stands out in the poverty league with more than one-fourth of its population (25.8 per cent in Consumer Finance and Socio-Economic Survey in 1996/97, and 25.3 per cent in the Sri Lanka Integrated Survey in 1999/2000) estimated to live below the poverty line. Furthermore, Sri Lanka ranks highest in the world for its suicide rate of 55.46 people per 100,000 people.² The rate of suicides among females in Sri Lanka is also highest in the world with almost 19 out of every 100,000 females committing suicide (1986 data).³ Suicide is the most common cause of death in the age group 15-25 years. In rural areas, pesticide poisoning is the most common method of committing suicide.

According to Global Alcohol Policy Alliance (GAPA), poor urban families in Sri Lanka that consumed alcohol spend more than 30 per cent of their total expenditure on alcohol. Another survey conducted in six Sri Lanka districts found that between 30 and 50 per cent of income of low-income families was spent on alcohol and tobacco. In addition, a survey by GAPA in 1997 also found that the total expenditure on tobacco and alcohol exceeded the amount of government assistance given to the community under the government's poverty alleviation programme in Sri Lanka. Given the

² Sahanaya Psychological Health Intervention Centre, Colombo, 1999 data (Jana Sammathaya website).

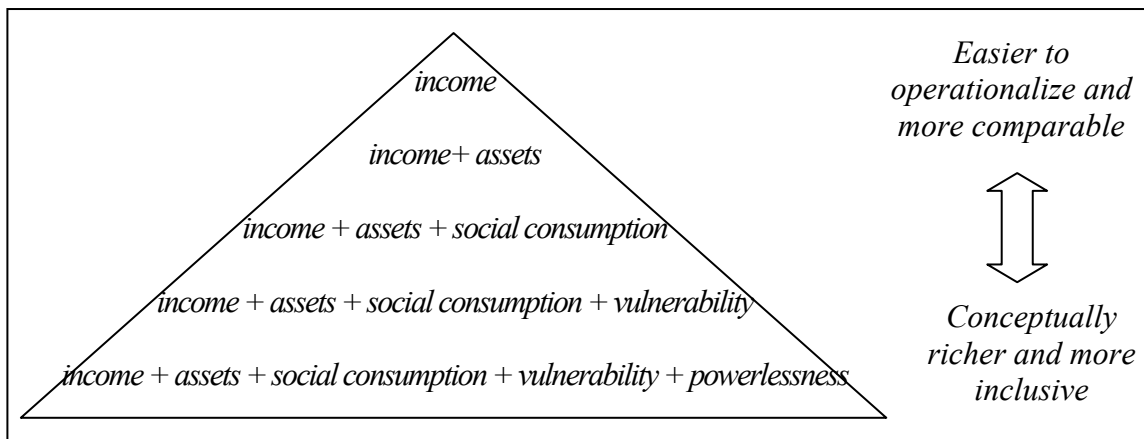
³ Source: www.nationmaster.com

situation mentioned above, alcohol consumption could indeed be a major factor in exacerbating poverty in those developing countries (Jayathilaka, 2007a). Moreover, a study done by Jayathilaka (2007a) found that households headed by females are less likely to consume alcohol as compared to families headed by males. However, this study shows 6 per cent of female-headed households consume alcohol as compared to 15 per cent of male-headed households.

Moreover, when one US dollar per person per day is considered as the poverty line (adjusted for purchasing power parity), only about 7 per cent of the Sri Lankan population is poor whilst the proportion of poor population increased to 45 per cent when the poverty line is increased to US \$ 2 a day. This indicates that more than one-fourth of the population receives income inadequate to meet their basic needs. Moreover, identification of the poor or the definition of poverty is rather complex since the dimensions of poverty are multi-faceted. Poverty is not just an inadequacy of income to meet basic needs or the inability to spend. In most cases, it is associated with numerous characteristics such as lack of assets, landlessness, unemployment or underemployment, illiteracy, malnutrition, high infant mortality, large family size, low productivity, low position in the social hierarchy, low access to publicly provided goods and services, poor infrastructure facilities and extreme vulnerability to natural calamities, disease and social conflicts (Siddhisena and Jayathilaka, 2003). The poverty status by household level varies due to some of the above factors and those factors are different between male and female headed households. It has become an increasingly important demographic phenomenon as well as a socio-economic issue in Sri Lanka.

As shown triangular in Figure 1, the wider the definition of poverty, the richer and more meaningful it is, but the less practical it becomes to operationalize, and the more difficult it is to make quantitative comparisons.

Figure 1: Pyramid of Poverty Concepts⁴



The pyramid of poverty concept provides an important insight into the trade-off between conceptual adequacy and practicality. It seems that income is a much more manageable concept to operationalize than the more complex multi-dimensional definitions of poverty. Income is also the central variable in absolute poverty, affecting most or all of the other factors that go into broader poverty definitions (Institute of Policy Studies, 2005). Hence, most poverty literature points out that the top of the pyramid represents the narrowest definition which is easiest to operationalize, while the bottom of the pyramid represents the broadest definition of poverty but with difficulty to operationalize. Therefore this study does not cover all the variables that relate with poverty due to data constraints. However, we point out several important variables that can be explained econometrically, to explain the poverty situation in Sri Lanka.

Recent studies in Sri Lanka emphasize that there is a poverty problem in FHHs. Policy discussion regarding FHHs is not new and is still a controversial issue. A focus on male and FHHs has perhaps distracted researchers and policy makers from a more general concern about the link between gender and poverty. However, a basic question such as what would be the impact of change in headship on status of poverty in Sri Lanka has not yet been addressed. Addressing such issues is important because female and MHHs have especial socio-economic and demographic characteristics and changing headship thus could affect the poverty differently in different sectors. i.e., urban, rural and estate.

⁴ Based on USAID (2004), Pro-Poor Growth: A Guide to Policies and Programmes.

Sri Lanka has seen considerable progress in human development since its independence from colonial rule in 1948. Indicators such as life expectancy, literacy, and infant, child and maternal mortality are impressive at a national level, and are correlated with the historically high government investment in basic health and education. The head of the household is the key decision maker at the household level. Therefore, the impact of poverty levels in relation to the change in headship is an important area to understand whether the FHHs contribute disproportionately to overall poverty in Sri Lanka.

The paper is organized in 6 sections. Section 2 describes the methodology and data while Section 3 highlights the process of identifying the poor and non-poor households with headship. Section 4 presents the coverage of the sample of the analysis. Section 5 discusses empirical results of the logit model by focusing on the regional disparities and the last section provides the concluding remarks.

2. The Logit Model and Data

Regression analysis has become a standard statistical tool in social science. It provides much explanatory power, especially due to its multivariate nature. Logistic regression is a statistical regression model for binary dependent variables. It can be considered as a generalized linear model that utilizes the logit as its link function, and has binomially distributed errors. Logit models bear a close association to other statistical techniques. For example, the choice probabilities explicit in logit can be derived from the structure of the discriminant analysis model (Klecka, 1980). The logit method is originally suggested by Berkson (1944 and 1955) and our logit model is mainly based on Hosmer and Lemeshow (2000) and Amemiya (1985).

By a monotonic transformation of a probability having finite range (0 to 1) to a logit having infinite range ($-\alpha$ to α), the problem of heteroscedasticity in the error term associated with a regression having a dichotomous dependent variable is avoided. Specially, the logit is defined as the natural logarithmic value of the odd in favour of a positive response, that is

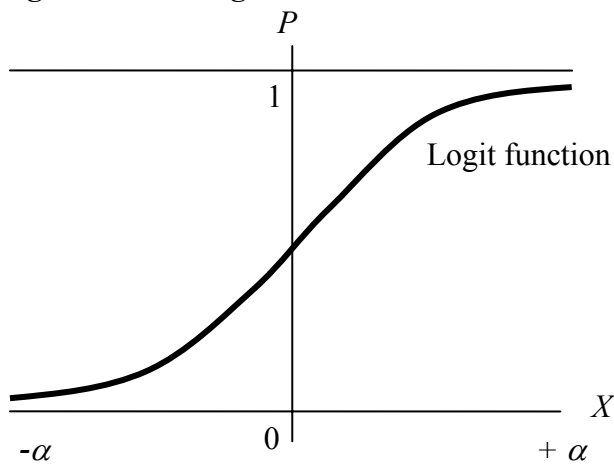
$$L_i = \log \left(\frac{p_i}{1 - p_i} \right) = \beta_0 + \beta x_i \quad (1)$$

where p_i is the proportion of non-poor households with characteristic x_i and β 's are the parameters. It is easily seen that

$$p_i = \frac{1}{1 + e^{-(\beta_0 + \beta x_i)}} \quad (2)$$

The interpretation of the β parameter estimates is as a multiplicative effect on the odds ratio. In the case of a dichotomous explanatory variable, for instance poor or non-poor, e^β (the antilog of β) is the estimate of the odds-ratio of having the outcome for poor compared with non-poor. In general, if we take the i^{th} slope coefficient (in case there is more than one regressor in the model) subtract 1 from it, and multiply the result by 100, we can get the percentage change in the odds for a unit increase in the i^{th} regressor (Gujarati, 1995). The parameters are usually estimated by maximum likelihood. Figure 2 illustrates the logit transformation. To see the point note that as the probability goes down to zero the odds approach zero and the logit approaches $-\alpha$. At the other extreme, as the probability approaches one the odds approach $+\alpha$ and so does the logit. Thus, logits map probabilities from the range (0, 1) to the entire real line. Note that if the probability is 1/2 the odds are even and the logit is zero. Negative logits represent probabilities below one half and positive logits correspond to probabilities above one half.

Figure 2: The Logit Transformation



The logit model for testing significant non-linear effects and interaction effects specifies that the logarithm of the odd in favour of “poor or non-poor” is a function of

age, household size, income, education and the headship. Specifically, the additive model can be expressed as;

$$L_i = \log \left(\frac{p_i}{1 - p_i} \right) = \beta_0 x_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + u_i \quad (3)$$

where p_i denotes the proportion of non-poor households based on the national poverty line⁵ in Sri Lanka. People who are living above the national poverty line are defined as non poor and the rest as poor. x_0 denotes the constant term, x_1 represents the age of the persons and x_2 represents the number of household members. x_3 is a scale variable that denotes the per capita household monthly income; x_4 is a set of ordered dummy variables denoting seventeen levels of education⁶ in household members; x_5 denotes the headship of the household; 0 for FHHs and 1 for MHHs.

Equation (3) is tested empirically with data for the household members who are older than 10 and above by using SPSS 13.0 (Statistical Package for the Social Sciences). For this study it used the Household Income and Expenditure Survey (HIES) of 2001/02 in Sri Lanka. HIES is conducted in every five years by the Department of Census and Statistics (DCS). HIES of 2001/02 was the fifth series and was conducted during the period from January 2002 to December 2002 in all provinces in the country excluding the Northern and Eastern Provinces due to the unavailability of a proper sampling frame and the conditions that prevailed in those areas. A two stage stratified random sample design was used in the survey and it covered 16,924 households with 71,293 population.

However, a household may be a one-person household or a multi-person household. A one-person household is a unit where a person lives by himself and makes separate provision for his food (either cooking the food himself or purchasing). A multi-person household is a group of two or more persons who live together and have a common arrangement for cooking and partaking food. Boarders and servants who share the meals and housing facilities with other members of the household are also considered

⁵ The person living in the households whose real per capita monthly total consumption expenditure is above Rs.1423 in year 2002 are considered as non-poor.

⁶ The ordered dummy values in this variable starts from 0 to 16 which starts from no schooling, grade 1 to 13 and other values for higher level of education.

as members of that household. Data was collected only from the persons living in households and therefore persons living in commercially run boarding houses, hotels, defence services camps and police barracks were not represented in the sample.

3. Identifying the Poor and Non-Poor Households with Headships

A household, as defined in the survey refers to a person or a group who usually live in the same housing unit and have common arrangements for the preparation and consumption of food. In general, headship is identified as the person responsible for most household decisions. Nevertheless, most surveys, including the HIES also identify FHHs as households where no husband or no adult male is present for a longer period. Generally, the definition of a head of the household reflects the stereotype of a person in authority and the breadwinner. However, households could be divided into two groups based on their headship. To identify the poor and non-poor groups of the households, the study used Rs 1423.00 as the poverty line.⁷

DCS had been using a poverty line based on a Food-Energy-Intake (FEI) method but now DCS has been using the method of Cost of Basic Needs (CBN) to derive the official poverty line in Sri Lanka. Based on that derivation of poverty line, this study finally identifies the four different household populations: named as Poor FHHs, non-poor FHHs, Poor MHHs and Non-poor MHHs.

Sri Lankan women have relatively better status than women in many other developing countries but have yet to achieve gender equality. Many of these women have been thrust into the role of the breadwinner with little knowledge of income-earning methods and few coping skills. It was seen that many of the development programmes had a different impact on women and men, and that the interface of socio-economic status and gender has increased the vulnerability of women in low income families to adverse trends in development. Females are more vulnerable than males and households headed by women are viewed as being at greater economic disadvantage than male headed households, because males generally have some social benefits with higher earning power than females, while females have time constraints imposed by having to fulfill

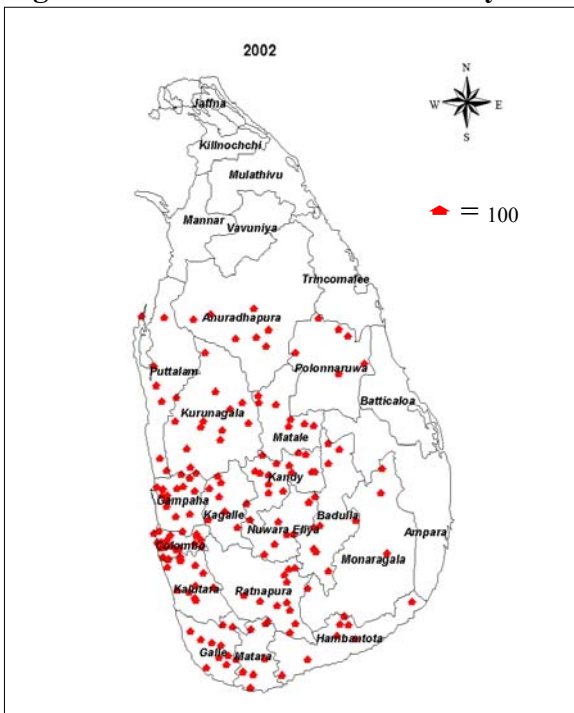
⁷ This number is calculated by the DCS and the official poverty line for January 2008 is Rs. 2824.00 at current price and now it has increased to more than Rs.2824.00.

both domestic and market work responsibilities which often restrict their access to social and health services.

4. Sample Distribution

The size of the sample and distribution of female and male headed households in the survey is presented in Table 1. The HIES in 2002 surveyed covered 16,924 households and 71,293 household population. As seen in Figure 3, a larger sample of households have been taken from the Colombo, Gampaha and Kandy districts while a smaller sample of households have been selected for Monaragala and Polonnaruwa districts. Sample selections were also taken into account in the national coverage of Sri Lanka by the DCS in 2002.

Figure 3: Household Distribution by District



Source: Author illustrations using HIES 2002 survey.

Detail sample distribution of the poor and non-poor household population is presented in Table 1. It shows 25.7 per cent of the population as being poor and 74.3 per cent as living above the poverty line. Moreover, it shows that 24.1 per cent of the FHHs and 26.0 per cent of the MHHs are poor. When compared to poor MHHs, the proportion of

the poor FHHs are low. Proportion of the poor FHHs and MHHs is calculated in each sector, province and district. The highest proportion of the poor FHHs (40.3 per cent) and poor MHHs (34.3 per cent) are from the Estate sector⁸. Urban poor population is relatively low. Uva, Sabaragamuwa and North Western provinces have recorded the highest proportion of poor population. The distribution of poor FHHs and poor MHHs are almost identical. However, the district-wise comparison of the poor FHHs and poor MHHs indicates that the distribution of poor FHHs and poor MHHs are not identical. The highest proportion of poor FHHs were recorded in Ratnapura (38.2 per cent) followed by Badulla (35.9 per cent), Puttalam (35.2 per cent), Kegalle (33.4 per cent) and Kurunegala (32.6 per cent) districts respectively. But the highest proportion of poor MHHs were from Monaragala (47.1 per cent). Second highest proportion of poor MHHs were from Badulla (43.3 per cent) followed by Hambantota (36.9 per cent), Ratnapura (36.2 per cent) and Puttalam (34.8 per cent) respectively. This clearly indicates that there is a district-wise variation in the distribution of poor FHHs and MHHs.

⁸ Plantation areas, which are more than 20 acres of extent and having not less than 10 residential labourers, are considered as estate sector.

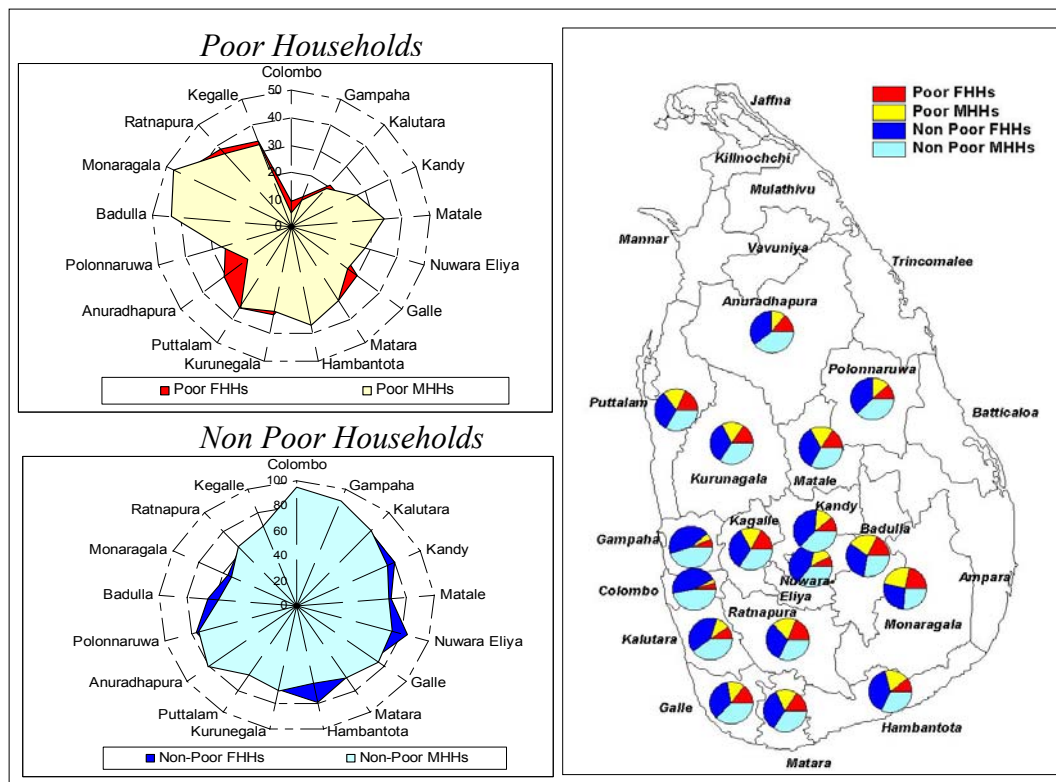
Table 1: Distribution of Poor and Non-Poor FHHs and MHHs by Sector, Province and District

Province	FHHs Population %		MHHs Population %		Total Population %	
	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor
Poor and non-poor status	24.1	75.9	26.0	74.0	25.7	74.3
Sector						
Urban	9.9	90.1	9.2	90.8	9.4	90.6
Rural	27.8	72.2	29.6	70.4	29.3	70.7
Estate	40.3	59.7	34.3	65.7	35.2	64.8
Province						
Western	12.9	87.1	10.5	89.5	11.0	89.0
Central	22.2	77.8	28.3	71.7	27.1	72.9
Southern	28.8	71.2	30.8	69.2	30.4	69.6
North Western	33.4	66.6	32.6	67.4	32.7	67.3
North Central	27.3	72.7	22.8	77.2	23.5	76.5
Uva	38.4	61.6	44.8	55.2	43.9	56.1
Sabaragamuwa	36.1	63.9	35.0	65.0	35.1	64.9
District						
Colombo	9.4	90.6	5.0	95.0	5.9	94.1
Gampaha	11.8	88.2	10.5	89.5	10.8	89.2
Kalutara	20.6	79.4	19.0	81.0	19.3	80.7
Kandy	21.1	78.9	26.1	73.9	25.1	74.9
Matale	31.1	68.9	33.4	66.6	33.0	67.0
Nuwara Eliya	15.7	84.3	28.1	71.9	26.4	73.6
Galle	29.6	70.4	25.3	74.7	26.1	73.9
Matara	32.4	67.6	32.4	67.6	32.4	67.6
Hambantota	21.6	78.4	36.9	63.1	34.6	65.4
Kurunegala	32.6	67.4	31.3	68.7	31.6	68.4
Puttalam	35.2	64.8	34.8	65.2	34.9	65.1
Anuradhapura	30.2	69.8	19.6	80.4	21.3	78.7
Polonnaruwa	24.7	75.3	26.2	73.8	25.9	74.1
Badulla	35.9	64.1	43.3	56.7	42.2	57.8
Monaragala	44.3	55.7	47.1	52.9	46.8	53.2
Ratnapura	38.2	61.8	36.2	63.8	36.5	63.5
Kegalle	33.3	66.7	32.3	67.7	32.5	67.5
Total (N)						

Source: Calculated using data from Household Income and Expenditure Survey 2001/2002.

Moreover, filled radar diagram⁹ in Figure 4 gives the snapshot of the distribution of the poor and non-poor FHHs and MHHs. Kegalle, Ratnapura, Anuradhapura, Puttalam, Kurunegala, Galle, Kalutara, Gampaha and Colombo districts recorded a relatively higher proportion of poor FHHs than poor MHHs. Higher proportion of non-poor FHHs were recorded in Monaragala, Badulla, Polonnaruwa, Hambantota, Nuwara Eliya, Matale and Kandy districts in comparison to Non-poor MHHs. In addition, the map in Figure 4 gives the intra-district variation of poor and non-poor FHHs and MHHs. In the year 2002, Kurunegala, Puttalam and Anuradhapura were reported as having a higher percentage of poor FHHs and Colombo, Gampaha was the lowest Poor FHHs represented districts.

Figure 4: Distribution of the Poor and Non-Poor FHHs and MHHs



Source: Author illustrations using HIES 2002 survey.

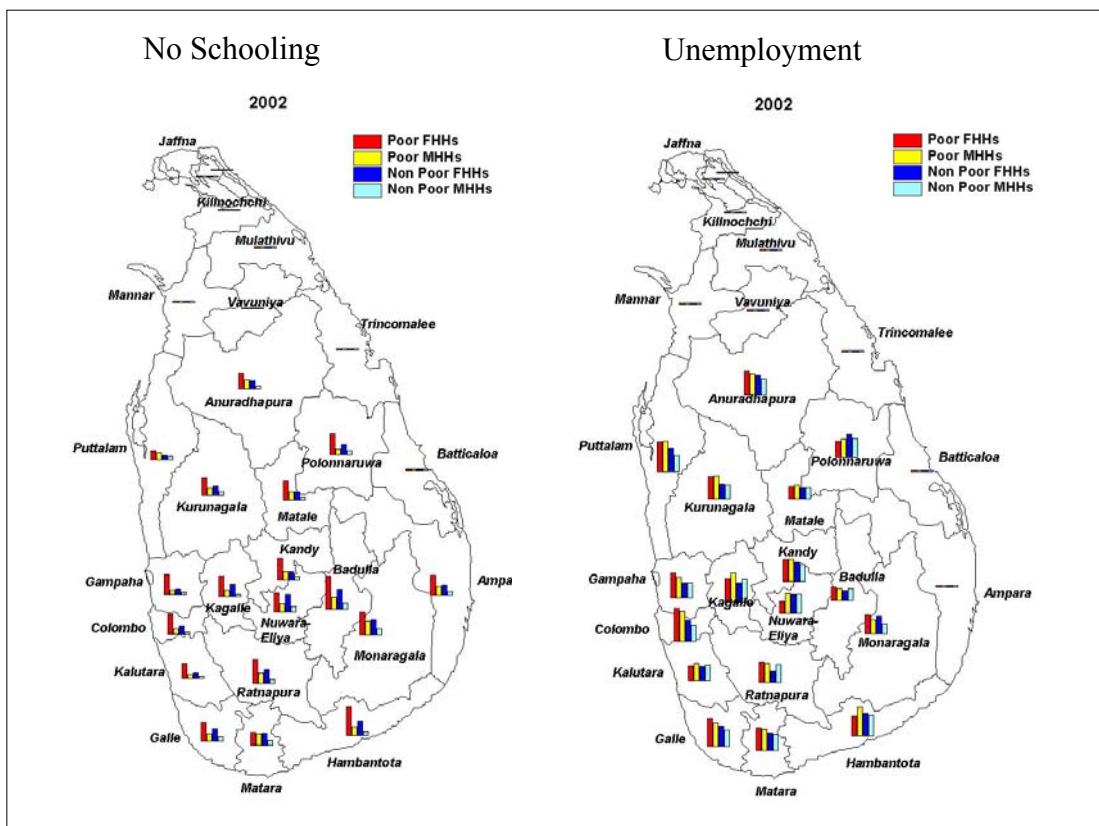
Figure 5 denotes the regional disparities of “no schooling”¹⁰ proportion of household heads and unemployment proportion. As seen in the Figure, most of the districts

⁹ In the filled radar diagram there can be several layers filled with different layer colours. When we put those layers into one diagram, then relatively higher parts of the bottom layer colours only could be transparent. This is easy to distinguish a picture rather look at tables.

¹⁰ Data based on age 10+.

reported that education attainment of poor female heads is relatively low when compared to poor male heads, non-poor female heads and non-poor male heads. In 2002, it is observed that Badulla, Hambantota, Ratnapura, Monaragala and Kandy districts were the top five districts of no schooling proportion of poor female heads. This indicates that there is a regional disparity between the level of education attainment of household heads and it is substantially very low in the poor FHHs.

Figure 5: Regional Disparities of “No Schooling” and “Unemployment” proportion of the Households in year 2002



Source: Author illustrations using HIES 2002 survey.

Unemployment by districts clearly indicates that in almost all districts unemployment rates are relatively high for the poor FHHs than for the other households. According to the data in 2002, Colombo, Puttalam, Galle, Gampaha and Anuradhapura districts respectively were reported as having higher unemployment rates in poor FHHs. This indicates that there is a tremendous regional disparity between the employment rates of the population. It is substantially low in the poor female heads and this has an effect on absolute poverty levels. Detailed illustration of other economic demographic

characteristics (e.g. Age sex distribution, dependent, marital status, labour force participation, occupational distribution, income and expenditure levels income and expenditure) of the poor FHHs in Sri Lanka have been shown in the study by Jayathilaka (2007b).

5. Empirical Results of the Logit Model

The analyses to ascertain the relationship between the selected variables were carried out for the equation (3). For each of the selected variables, a correlation test was done while running the logit model. The corresponding resultant correlation coefficients are compiled in the matrix given as Table 2. Looking at the correlation matrix, the study observes that the correlation between independent variables is very low. The highest correlation (except constant) comes from per capita household income and the level of education. But it is also a very low correlation and does not exceed 1.5 per cent in the logit model. Considering all these correlation facts we can conclude that the correlation between the independent variables is negligible and there is no high multi-collinearity problem in this model.

Table 2: Correlation Matrixes

Sri Lanka							Urban sector						
	x_0	x_1	x_2	x_3	x_4	x_5		x_0	x_1	x_2	x_3	x_4	x_5
x_0	1						x_0	1					
x_1	-0.43	1					x_1	-0.35	1				
x_2	-0.59	0.09	1				x_2	-0.64	0.05	1			
x_3	-0.34	-0.02	0.05	1			x_3	-0.32	-0.01	0.13	1		
x_4	-0.34	0.05	-0.07	-0.10	1		x_4	-0.33	-0.15	-0.01	-0.12	1	
x_5	-0.46	0.04	-0.04	0.05	-0.01	1	x_5	-0.50	-0.04	0.09	0.02	-0.01	1
Rural sector							Estate sector						
	x_0	x_1	x_2	x_3	x_4	x_5		x_0	x_1	x_2	x_3	x_4	x_5
x_0	1						x_0	1					
x_1	-0.43	1					x_1	-0.04	1				
x_2	-0.59	0.10	1				x_2	-0.6	0.06	1			
x_3	-0.33	-0.02	0.05	1			x_3	-0.5	-0.02	0.09	1		
x_4	-0.34	0.06	-0.09	-0.09	1		x_4	-0.3	0.17	-0.05	-0.05	1	
x_5	-0.42	0.03	-0.10	0.04	-0.00	1	x_5	-0.4	0.00	-0.12	0.06	-0.03	1

5.1 Interpretation of the logit models

Results of the equation (3) are displayed in Table 3. Interpretation of the logit model is not similar as in normal ordinary least square regression. It is a non-linear regression and we have to take the anti-log values of the coefficient and then substrate one.

Table 3: Logit Model Results for Sri Lanka

Variable	Sri Lanka		Urban		Rural		Estate	
	β	Exp (β)	β	Exp (β)	β	Exp (β)	β	Exp (β)
Constant	-0.3139*	0.7306	0.9568*	2.6033	-0.2217*	0.8012	-0.2115	0.8094
age	0.0065*	1.0065	0.0070*	1.0070	0.0063*	1.0063	0.0040**	1.0040
f_size	-0.1707*	0.8430	-0.1112*	0.8947	-0.2408*	0.7860	-0.3144*	0.7302
p_h_inco	0.0007*	1.0007	0.0002*	1.0002	0.0007*	1.0007	0.0012*	1.0012
education	0.0881*	1.0921	0.1247*	1.1328	0.0889*	1.0930	0.0537*	1.0551
headship	0.0712*	1.0738	0.0712	1.0738	0.1506*	1.1625	0.4990*	1.6471

Note: * Significant at 0.01 level.

** Significant at 0.05 level.

Summary Statistics:

Sri Lanka (n = 65790), Log likelihood ratio = 60851.58, Adjusted $R^2 = 78.02$.

Urban (n = 13403), Log likelihood ratio = 7152.68, Adjusted $R^2 = 90.67$.

Rural (n = 47751), Log likelihood ratio = 46808.28, Adjusted $R^2 = 76.32$.

Estate (n = 4636), Log likelihood ratio = 4801.16, Adjusted $R^2 = 73.25$.

As can be seen from the results of the logit model for Sri Lanka in Table 3, all the estimated coefficients are individually significant and the Logit model for Sri Lanka explains 78 per cent of the total variations.

The coefficient of age shows that 1 year increase in age will decrease poverty by 0.65 per cent, holding others constant. Therefore, age gives less relationship to determine poverty. The coefficient of family size tells that there is a negative relationship between poverty and the number of family members. Thus, increase by one family member in the household in Sri Lanka will result in poverty increasing by 17 per cent. If the households have more members, then their per capita household income (including the unemployed members) will reduce. On the other hand, per capita total consumption will be stable or increase. Large families are relatively poorer than smaller ones, which is the implication for the possible effectiveness of population control policies.

Positive income coefficient illustrates the positive relationship between poverty and income. It reveals the fact that if the per capita income of the population increases by 1

rupee, poverty will decrease by 0.07 per cent. On the other hand, if household per capita income increased by 1000 rupees it will decrease poverty by 7 per cent in Sri Lanka. Compared to other independent variables, education plays a significant role in affecting poverty. Poverty drops by nearly 9 per cent if education increases by one year (or one grade). This obviously implies that education should definitely be emphasized by policy makers.

Headship coefficient shows that there is a 7 per cent effect on poverty if the headship is changed from male to female. In Sri Lanka, women could not enjoy equal working opportunities and other social benefits as men do. As a developing country, women in Sri Lanka are a more vulnerable group when compared to males. This gives rise to increased poverty when the headship moves from male to female due to several reasons, such as death, migration and long-term absence of the male headship. This implies that social and economic policies in favour of working women should be promoted.

In relation to analysis undertaken at the sectoral level (i.e., urban, rural and estate), it seems that in the case of the urban sector, the change in the headship towards female is not an important factor for increasing poverty. In other words, in urban areas, family headship is not affecting poverty much. This is not a surprising finding. In urban areas, working women and men are treated relatively equally. This greatly helps to reduce the effect of headship. The most important factor in reducing poverty in the urban sector is the level of education. A marginal one year's education could reduce poverty of the urban sector by 12 per cent, a number much larger than that of the rural and estate sectors with 9 per cent and 5 per cent respectively. Therefore, for the urban sector, the most effective ways to decrease poverty are the promotion of education policies.

However, for the rural and estate sector changing headship towards the female is a significant factor and it will increase poverty in those sectors by 16.2 per cent and 64.2 per cent respectively. If a person's income is increased by one rupee then the poverty in the urban, rural and estate sectors will decrease by 0.0002, 0.0007, and 0.0012 respectively. This means that increasing income is much more effective in decreasing poverty in the estate sector and rural sector, than in the urban sector.

These findings indicate an interesting picture of reducing poverty for Sri Lankan policy planners. Reducing urban poverty is much more related with the person's education level than the other variables in the model. For reducing rural poverty, both the level of education and headship are important factors. Finally, it is very important to consider the headship to reduce estate sector poverty.

5.2 Regional Disparities

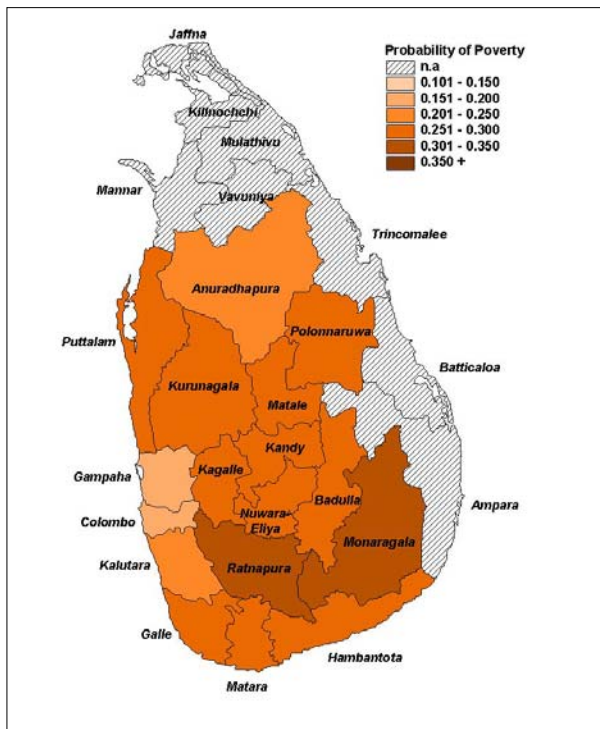
The logit model captured the incidence and probability of poverty in the survey and it is presented in Table 4. As far as the probability of poverty by sector is concerned, the highest probability is reported in the estate sector followed by the rural sector. This is almost double the urban sector. For example, in 2002 FHHs have a 34 per cent probability to live in the estate sector while urban and rural sector were predicted as 19 per cent and 24 per cent respectively.

Table 4: Probability of Poverty by Headship

	Population	Rank	MHHs	Rank	FHHs	Rank
Sri Lanka	0.2546		0.2580		0.2397	
Sector						
Urban	0.1787	3	0.1749	3	0.1923	3
Rural	0.2671	2	0.2711	2	0.2477	2
Estate	0.3461	1	0.3466	1	0.3435	1
District						
Colombo	0.1593	17	0.1506	17	0.1936	17
Gampaha	0.1812	16	0.1749	16	0.2033	16
Kalutara	0.2215	15	0.2238	15	0.2109	15
Kandy	0.2531	13	0.2613	12	0.2225	14
Matale	0.2813	9	0.2843	8	0.2666	7
Nuwara Eliya	0.2942	4	0.3038	3	0.2338	12
Galle	0.2636	11	0.2669	11	0.2499	11
Matara	0.2977	3	0.3037	4	0.2766	3
Hambantota	0.2900	6	0.2956	6	0.2595	8
Kurunegala	0.2579	12	0.2581	13	0.2569	9
Puttalam	0.2826	8	0.2842	9	0.2742	4
Anuradhapura	0.2441	14	0.2462	14	0.2328	13
Polonnaruwa	0.2855	7	0.2887	7	0.2714	5
Badulla	0.2932	5	0.3010	5	0.2504	10
Monaragala	0.3498	1	0.3537	1	0.3190	1
Ratnapura	0.3361	2	0.3399	2	0.3101	2
Kegalle	0.2806	10	0.2839	10	0.2669	6

The regional disparities of probability of poverty by districts are clearly depicted in the set of maps in Figure 6 and Figure 7. All these predicted values were computed by the estimated logit model by using 65,790 number of individuals in the survey. GIS is used to derive these maps in order to highlight district-wise variations.

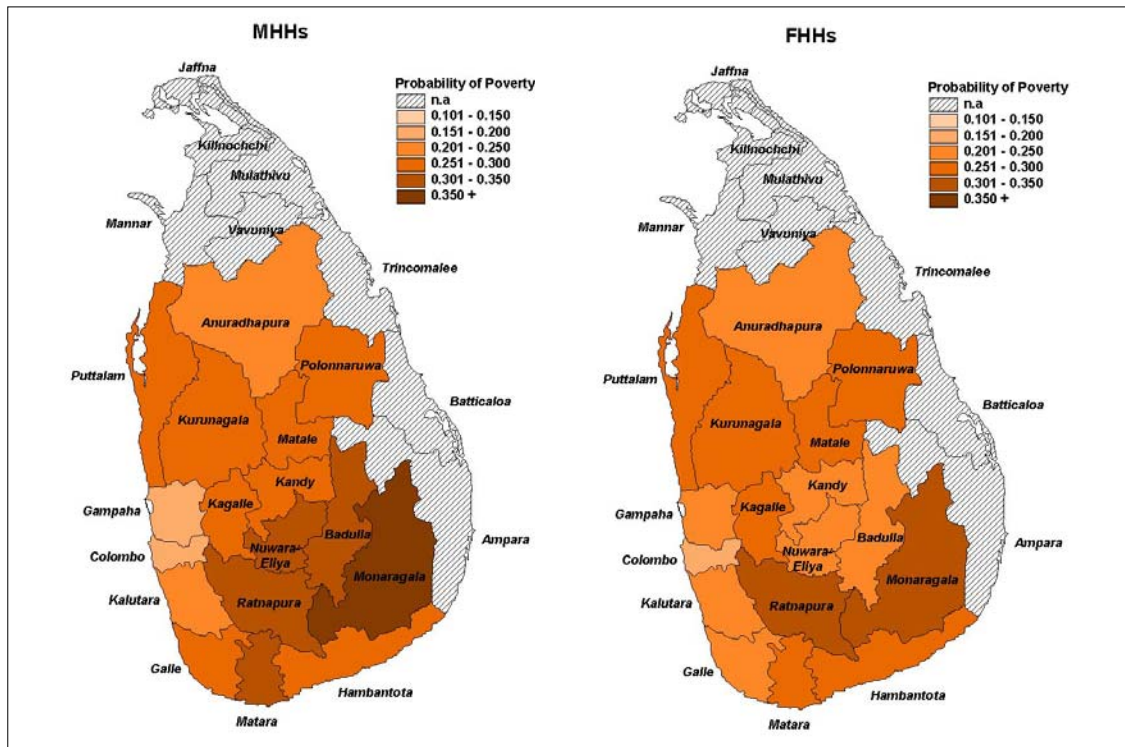
Figure 6: Regional Disparities of Probability of Poverty



Source: Author illustrations using HIES 2002 survey.

As shown in Figure 6, the highest probability of poverty was recorded in Monaragala (34 per cent) in year 2002. Ratnapura and Matara are the other two districts that face a 33 per cent and 29 per cent probability of poverty in 2002.

Figure 7: Regional Disparities of Probability of Poverty by Headship



Source: Author illustrations using HIES 2002 survey.

Figure 7 clearly depicts the regional variations in the probability of facing poverty between the MHHs and FHHs in 2002. The highest possibility for an individual who is in MHHs was predicted by the logit model. The highest predicted values were recorded in Monaragala (35 per cent) Ratnapura (34 per cent) and Nuwara Eliya (31 per cent) districts. Matara (31 per cent), Badulla (30 per cent) and Hambantota (30 per cent) were recorded subsequently. For FHHs in 2002, Monaragala (32 per cent) and Ratnapura (31 per cent) were predicted as the districts with the greatest probability of poverty. These two districts were same for the MHHs in 2002. However, Matara (28 per cent), Puttalam (28 Per cent), Polonnaruwa (27 per cent), Kegalle (27 per cent), Matale (27 per cent), and Hambantota (26 per cent) were predicted as the next highest probability of poverty for FHHs in 2002.

6. Concluding Remarks

Based on the national poverty line, the level of poverty among male and female headed households is similar but there are regional disparities. Poverty among both households is lower in the urban sector in comparison to the rural and the estate sector. Poverty is severe in the Estate sector FHHs. Poverty among FHHs is also high in the Uva, Sabaragamuwa and North Western provinces. Female headed households in the districts of Kegalle, Ratnapura, Anuradhapura, Puttalam, Kurunegala, Galle, Kalutara, Gampaha and Colombo have a higher probability of being poor.

The results of the logit model presented in this paper indicate that the level of education, family size, income and headship are important factors associated with poverty in Sri Lanka. In relation to analysis undertaken at the sectoral level (i.e., urban, rural and estate), it seems that in the case of the urban sector, the change in the headship towards female is not an important factor for increasing poverty. A higher level of education will decrease urban poverty significantly. However, in the urban and rural sectors other variables such as family size, income and headship are highly related to poverty. This probability of poverty is almost double the probability of poverty in the urban sector. Predicted logit values suggest that Monaragala and Ratnapura are the districts which are relatively deprived by having a high probability of poverty for FHHs. In addition, headship is a very important factor to take into consideration in reducing poverty in the estate sector. The facts presented in this paper clearly indicate that the government and society of Sri Lanka face different issues of poverty among FHHs and MHHs.

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