

# Analyzing the Determinants of Poverty in Kurunegala District

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## ABSTRACT

The paper analyzes the incidence, poverty reduction efforts aim at changing those household characteristics that are judged important determinants of household welfare and poverty status. The determinants of poverty for Kurunegala district households are modeled by conducting multiple regression analysis of house hold using primarily data from the 2006/07 Household Income and Expenditure Survey.

Poverty was measured using per capita expenditure and contrasts the effects of various variables. This model was used to, simulate the effects of changes in key household characteristics, and to assess the likely impact on poverty of a number of poverty reduction policy interventions.

Poverty in both periods follows some of the determinants commonly identified in the literature, including greater poverty among households with less income and less education. The study shows that poverty status is strongly associated with the per capita income, level of education, per calories per day, household size and urban status.

**KEYWORDS:** Kurunegala , Poverty, Survey

## INTRODUCTION

This research project is carried out to study on the factors affecting the poverty in Kurunegala District. The current practice of the Census and Statistics Department is to analyse the poverty taking the country as a whole. Thus, they provide figures in province wise and district wise without making in depth analysis on each district.

However, the district-wise analysis gives more accurate and reliable information since those factors could be studied deeply by the researcher the poverty in the district.

In the research it is expected to find out to what extent the factors influenced by the poverty.

## LITERATURE REVIEW

Poverty profiles are a useful way of summarizing information on the levels of poverty and the characteristics of the poor in a society. They also provide important clues to the underlying determinants of poverty.

Even though the poverty profiles are important but the source of information are limited. Poverty is an intangible characteristic of life which is measurable by using standard benchmarks or certain criterias.

Broadly, poverty can be introduced as deprivation in well – being. And it reflect that, poverty is hunger, lack of shelter, lack of health facilities, not having access to education, not having a proper occupation, not being protected from violence, powerlessness, lack of representation, scarcity of resources and fear for the future. According to that definition the poor are those who do not have enough income or consumption, in other words, not having enough resources to meet their basic needs. Poverty has many characteristics changing from place to place and across time.

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Each country measures poverty according to its level of development, societal norms, and values. Because of these differences, the poverty level may change from country to country.

**Multiple Regression**

Multiple regression is a statistical technique that allows to predict someone's score on one variable on the basis of their scores on several other variables. When using multiple regression in psychology, many researchers use the term "independent variables" to identify those variables that they think will influence some other "dependent variable". The term "predictor variables" is preferred to use for those variables that may be useful in predicting the scores on another variable which call, the "criterion variable".

**METHODOLOGY**

This research is designed with secondary data. Secondary data is collected from the Household Income and Expenditure Survey (HIES) carried out by Department of Census and Statistics. All the information are contained in numeric format and they were separated according to variables.

Data regarding the head of household is collected. The following are the basic steps that will include in the data analysis section.

- Finding correlation between independent variable and dependent variable
- Carrying out a stepwise regression analysis
- Model fitting>Selecting the best model by considering R, R<sup>2</sup>, adjusted R<sup>2</sup>
- Removing the outliers to improve the accuracy of the model, checking the acceptability using ANOVA tables

- Comparison of the original model with the revised (Outliers removed) model
- Residual analysis
- Interpreting the model

In the analysis of the research, it is expected to carry out descriptive analysis, multiple regression techniques, ANOVA tests, Correlation, etc.

**DATA ANALYSIS**

Initially, gender of house hold heads & main lighting method were analysed using the collected data.

**Table 1: Gender of the Household Head**

Sex	Freq	Percent	Cumulative Percent
Male	829	75.7	75.7
Female	266	24.3	100.0
Total	1095	100.0	

Table 1 shows how the gender of the household has distributed in the Kurunegala district.

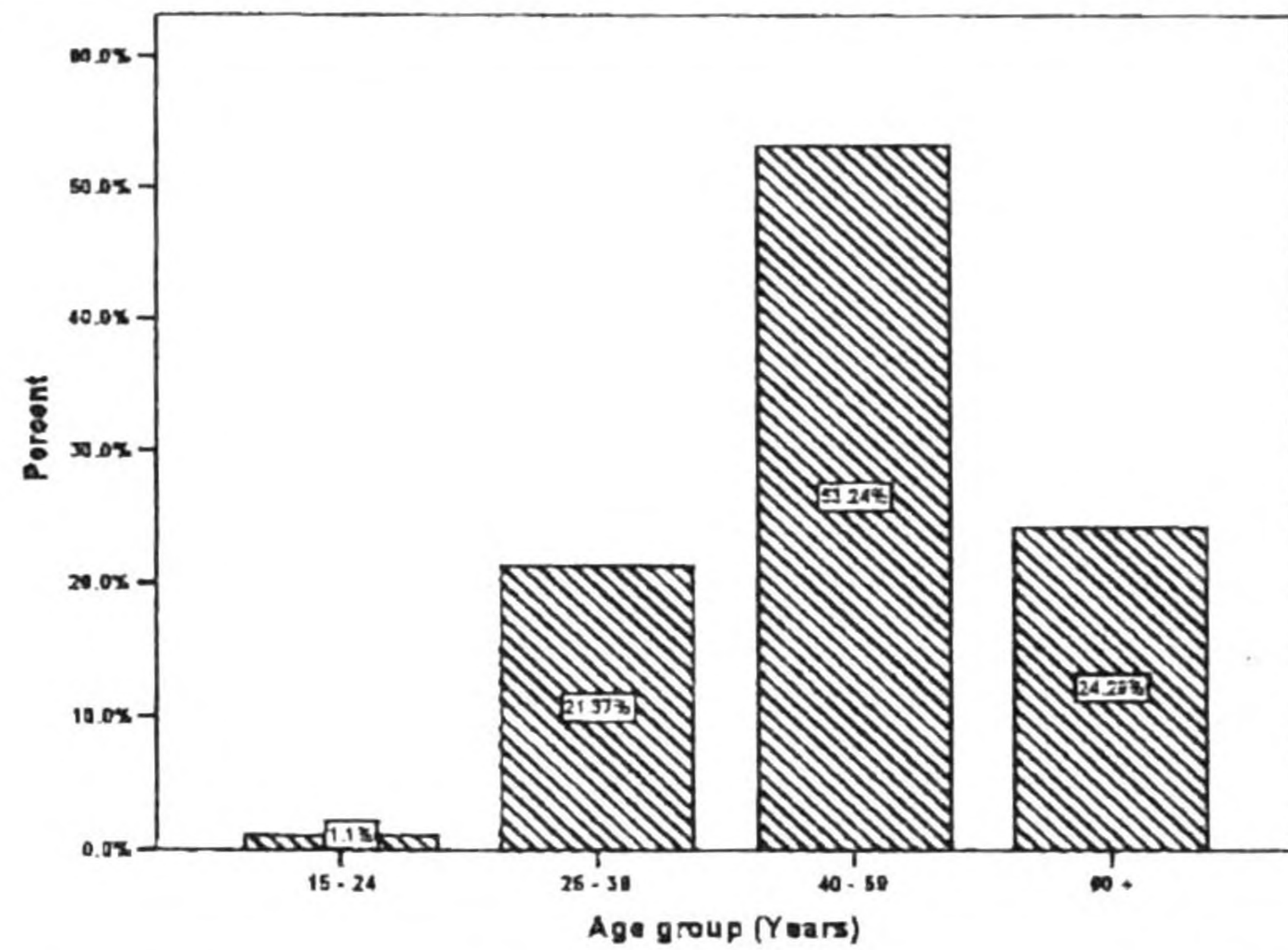
**Table 2: Main Lighting Method**

Principal Type of Lighting	Freq	Percent	Cumulative Percent
Kerosene	270	24.6	24.6
Electricity	775	70.8	95.4
Solar power	49	4.5	99.9
Generator/Battery	1	.1	100.0
Total	1095	100.0	

In Kurunegala district, the main lighting method is Electricity. But a considerable percentage still uses kerosene (24.7%).

Age distribution of the head of a household is another important indicator for poverty determinant. Figure 1 highlights that the highest percentages are reported in the age group 40-59. Minimum age distribution of household head is reported in the age

group 15-24. In this district more than 75% of household heads are older than 39 years.



**Figure 1: Age distribution of household head**

To analyze the level of education achieved by the household head education level was categorized into six groups according to the following table.

**Table 3: Level of education achieved by household head**

Level of Education	Freq	Percent	Cumulative Percent
No schooling	44	4.0	4.0
Up to 5	291	26.6	30.6
6 - 10	482	44.0	74.6
GCE(O/L)	152	13.9	88.5
GCE(A/L)	96	8.8	97.3
Degree +	30	2.7	100.0
Total	1095	100.0	

The highest level of education achieved by household head reported from 6-10 group which is nearly 44%. Nearly 25% of the head of household have passed G.C.E. (O/L) and above. Furthermore, the survey results reveal that 2.7% of the household heads have achieved a degree or above. 4% of the households have not received school education.

Multiple regression were used to find out the relationship with variables. Results were shown in following table.

**Table 4: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807	.651	.648	23318.97543

$R$ , the multiple correlation coefficient, is the linear correlation between the observed and model-predicted values of the dependent variable. Its large value (0.807) indicates a strong relationship.

**Analysis of Variance**

The ANOVA table tests the acceptability of the model from a statistical perspective.

$$H_0: b_1 = b_2 = \dots = b_k = 0 ; k=1,2,\dots,6$$

$H_1$ : At least one  $b_i$  is not equal to zero

**Table 5: ANOVA table**

Source of Variation	Sum of Squares	df	Mean Square	F
Regression	1E+012	6	2E+011	295.69
Residual	5E+011	953	5E+008	
Total	1E+012	959		

A large F value indicates that most of the variation in y is explained by the regression equation and that the model is useful.

$$295.69 > 2.11$$

**Reject  $H_0$ .**

**Table 6: Coefficients of Multiple Regression**

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-334.910	236.977		-1.413	.158
pcincome	.277	.015	.419	18.513	.000
Urban	2666.199	324.174	.160	8.225	.000
Household size	-107.331	28.516	-.079	-3.764	.000
Level of education (passed)	361.514	46.838	.164	7.718	.000
pccalpd	1.023	.064	.338	16.053	.000
Vehicle(fuel)	866.459	93.772	.196	9.240	.000

There is sufficient evidence to reject the null hypothesis in favor of the alternative hypothesis. At least one of the  $b_i$  is not equal to zero. Thus, at least one independent variable is linearly related to  $y$ . This linear regression model is valid.

## RESULTS

The regression equation is:

$$\begin{aligned} \text{Per capita expenditure} = & - 335 \\ & + 0.277 (\text{Per capita income}) \\ & + 2666 (\text{Urban sector}) \\ & - 107 (\text{Household size}) \\ & + 362 (\text{Level of education (passed)}) \\ & + 1.02 (\text{Per capita calories per day}) \\ & + 866 (\text{Vehicle (fuel)}) \end{aligned}$$

According to the coefficient of the variable shown in Table 6, when per capita income, urban status, level of education achieved by household head, per capita calorie per day and house hold vehicle, the probability of that household to become poor is decreased. That is, the poorness decreases when increasing the per capita expenditure increases.

The poverty level of the household is increased according the coefficient of the household size.

## DISCUSSION AND CONCLUSION

The aim of this research was to carry out an in depth study on the factors affecting the poverty in Kurunegala district. In this paper, we have sought to extend the descriptive and advanced analysis of the poverty profile modeling the determinants of poverty, using data from the 2006/07 Household Income and Expenditure Survey. The approach to modeling the determinants of poverty was to model the determinants of the household heads' characteristics.

According to this analysis, Per capita income, Urban sector, Household size, Level of education, Per capita calories per day,

Vehicle used, affect the poverty in Kurunegala district. It was observed that merely identifying a poverty status of an individual is not that good in the fitted model, indicating that there are other factors influencing poverty. The available variables and their meaningful interactions, squared terms would not sufficiently fit to the model. Also re-classification of some quantitative variables into categorical variables too not supports the fit.

However, by improving this model, we can predict the poverty status of an individual who is living in a given household as an usual resident. The status of poverty estimated above is mainly based on per capita income. The information pertaining to an individual, which will be substituted in the explanatory variables in the model, should obtain from other reliable sources like Census, Survey or from any available data source.

A key conclusion of this study has to do with the important instrumental role of education in alleviating poverty in Kurunegala district. Educational investments, for instance, have inherently long gestation; what the research results indicate is that they can be powerful instruments for long-term poverty reduction.

The development of policies and programmes to target the poor requires alternative approaches to identifying poverty, which reflect the poverty reduction objectives. The gradual adoption of participatory methods when developing poverty reduction strategies suggests an increased awareness of alternative approaches but this need to be mainstreamed into policy development. As economic growth catches up with Sri Lanka's social indicators, using and institutionalizing alternative approaches to understanding relative poverty becomes even more crucial.

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