

Poverty and inequality in remote upland areas in Walapane: spatial patterns and geographic determinants

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Abstract

Poverty is a complex and multidimensional social phenomenon. It is widespread and includes a broad, worldwide population, from children to the elderly, and not excluding ethnic minorities. Poverty in Sri Lanka continues to be a large problem. Sri Lanka's life expectancy and literacy rate are nearly on par with those of developed countries, and even top the rankings for the South Asia region. While all these indicate that Sri Lanka should be experiencing a high standard of living, until recently it has only ranked in the medium category of the Human Development Index (HDI). However, still there are significant disparities across sectors, provinces and districts. Poverty is high in the rural sector and low in the urban sector. Rural poverty has received less attention than urban poverty from both policymakers and researchers. This study was conducted in two Grama Niladhari Divisions (GN) in Walapane Divisional secretariat which situated in the high elevation range with more than 3000 feet above the sea level. The main objectives of the study is to identify the income diversification of the area and recognize the spatial distribution of poverty in the region. Data were collected in Roopaha and Alakolawewa areas using stratified sampling method which represent the all elevation levels in the region. Poverty head count Index and poverty gap index were developed in order to value the poverty in the study area. Further, the official poverty line of Nuwara eliya has been used to identify the poverty levels of the region. The analysis confirms that the inequality in per capita income is relatively low in both GN by local standards. Both Poverty headcount index and poverty gap index reveals an equal poverty level in Both GN divisions. The spatial patterns in income diversification emphasize that income and elevation are inversely correlated in both GN Divisions. Trend analysis also demonstrate the spatial variation of poverty directions within the GN divisions. Findings indicate the need for new directions in future poverty research and a reconsideration of the importance of space in poverty theories.

Keywords: Poverty, income, elevation, walapane

Introduction

Poverty is a complex and multidimensional social phenomenon which is widespread and includes a broad, worldwide population, from children to the elderly, and not excluding ethnic minorities. In pure economic terms, income poverty is when a family's income fails to meet a federally established threshold that differs across countries. (UNESCO, 2017) Typically it is measured with respect to families and not the individual, and is adjusted for the number of persons in a family. Economists often seek to identify the families whose economic position falls below some minimally acceptance level. Similarly, the international standard of extreme poverty is set to the possession of less than 1\$ a day. Frequently, poverty is defined in either relative or absolute terms. Absolute poverty measures poverty in relation to the amount of money necessary to meet basic needs such as food, clothing, and shelter. Relative poverty defines poverty in relation to the economic status of other members of the society. (UNESCO, 2017) The poverty line specifies the minimum standard of living condition in the society to which everybody should be entitled. A person is identified as poor if he or she cannot enjoy this

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minimum condition. Thus the poverty line is the threshold line that identifies who the poor are, is the starting point of poverty analysis.

Poverty in Sri Lanka continues to be a large problem. Sri Lanka's life expectancy and literacy rate are nearly on par with those of developed countries, and even top the rankings for the South Asia region. While all these indicate that Sri Lanka should be experiencing a high standard of living, until recently it has only ranked in the medium category of the Human Development Index (HDI). However, still there are significant disparities across sectors, provinces and districts. Poverty is high in the estate and rural sector and low in the urban sector. (Household Income and Expenditure Survey - 2006/07) All the districts other than Nuwara-Eliya achieved their goals to reduce poverty over the period of last 15 years. Extraordinary Nuwara-Eliya district increased poverty by about 68 percent over the two interim periods 1990/91 to 2006/07. (Household Income and Expenditure Survey - 2006/07) It is noticed that the real total expenditure per month in estate sector with a low nonfood proportion remains much closer to the poverty line. Rural poverty has received less attention than urban poverty from both policymakers and researchers. So this research may help social planners in delivering social services based on needs and location of poverty. Further, the identification of various dimensions of poverty will be helpful in policy making and enhance the wellbeing of rural and estate sector.

Objective

The main objectives of the study are to identify the income diversification of the area and to recognize the spatial distribution of poverty in the region.

Data and methods

Study area

As a One of the administrative area in Nuwara Eliya District, Walapane Divisional Secretariat is has a population of 103,152 people. The year-round climate is cool with chilly nights since the area is located above 1280 meters above sea level. The Temperatures range from 24 °C to just 16 °C in Walapane. Rainfall in the area is peaks in October to February with North – eastern monsoons. The general rainfall is monsoonal, conventional and digressional origin. The average annual rainfall for the project area is around 2000 – 3000 mm. The terrain is mostly mountainous, with deep valleys cutting into it. Two of the GN Divisions in Walapane Divisional Secretariat named as Alakolawewa and Roopha have been selected as the study area for this research.

Data collection

Although the concepts, measures, and analytical tools can be applied to numerous dimensions of poverty, such as income, consumption, health, education, and assets ownership, this research mainly focused on income and consumption of the households which emphasize the economic perspective of the poverty. The related data for the income and consumption were gathered using a Questionnaire survey which mainly focused on the economic background of each household. Even though the Income and Consumption values are largely used in poverty analysis, Consumption can be identified as the better outcome indicator than income. (World Bank, 2016)

Actual consumption is more closely related to a person's well-being in the sense defined above, that is, of having enough to meet current basic needs. Further, Income is only one of the elements that will allow consumption of goods; others include questions of access and availability. In that case Consumption may be better measured than income and it provides the platform for identify the income of a particular region where consumption details demonstrate the income status of the area more accurately. As an agrarian economies, In Walapane divisional secretariat, incomes for rural households can be fluctuated during the year, especially with the harvest cycle. This implies a potential

difficulty for households in correctly recalling their income, in which case the information on income derived from the survey may be of low quality and low accuracy. In estimating agrarian income, an additional difficulty in estimating income consists in excluding the inputs purchased for agricultural production from the farmer's revenues. Finally, large shares of income are not monetized if households consume their own production or exchange it for other goods, and it might be difficult to price these.

Therefore, Consumption may better reflect a household's actual standard of living and ability to meet basic needs. Not only that the goods and services that a household can command based on its current income, but also whether that household can access credit markets or household savings at times when current income is low or even negative, perhaps because of seasonal variation, harvest failure, or other circumstances that cause income to fluctuate widely. In that sense, this research was mainly focused the consumption values of the study area over the Income values. In that case, the analysis for both income and expenditure values provides more accurate values for the Income of the region which reflect the accurate poverty level of the regions.

Data analysis

For the analyzing purpose of these Economic measures, Statistical analysis was performed with the use of SPSS 16.0 software, especially for the identification of Grama Niladhari level (GN level) differences in poverty. Further, Income variations of Alakolawewa and Roopha regions have been compared using analysis of variance (ANOVA Test), The results were considered statistically significant when the error was less than 5% ($p < 0.05$). The results have been used to identify the income and poverty differences of both Grama Niladhari divisions.

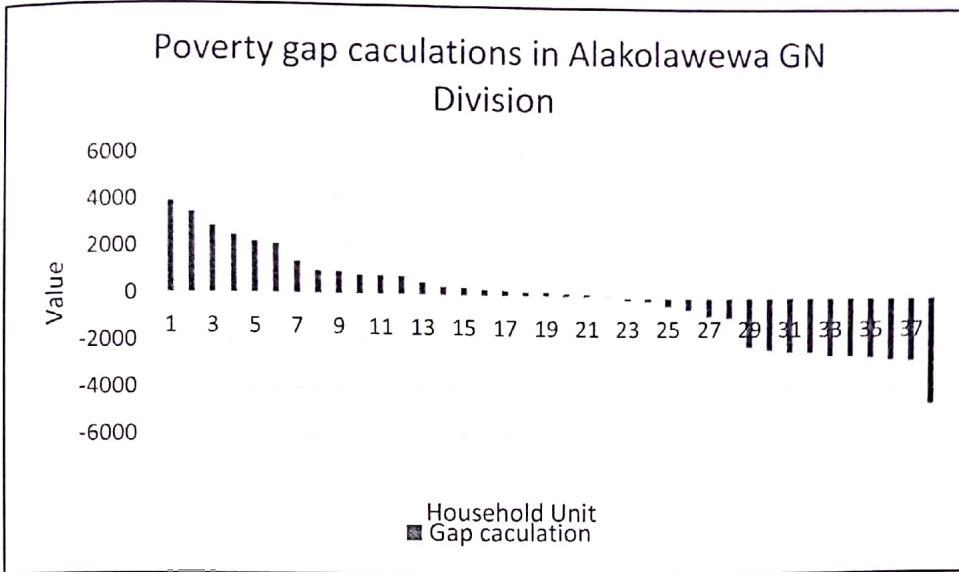
Head count index has been used as a basic poverty measure in this study. This index can be defined as the fraction of the population below the poverty line. Simply measures the proportion of the population that is counted as poor. Since the headcount index is a limited measure of poverty and does not take into account the degree or magnitude of poverty, the poverty gap measure has been used in conjunction with the headcount index. The poverty gap index measures the average shortfall of the income of the poor from the poverty line. And also expresses it as a percentage of the poverty line. More specifically, it defined the poverty gap as the poverty line less actual income for poor individuals; the gap is considered to be zero for everyone else.

Further, the spatial distribution patterns of the poverty was identified with the IDW Interpolation tool in Arc GIS 10.1. Which emphasize the poverty zone in the region where poverty take place. A trend analysis also measured using Arc GIS software, which mainly focused on the direction of poverty in the study area. The results of the spatial and statistical analysis were demonstrate with the maps and graphs.

Results and discussion

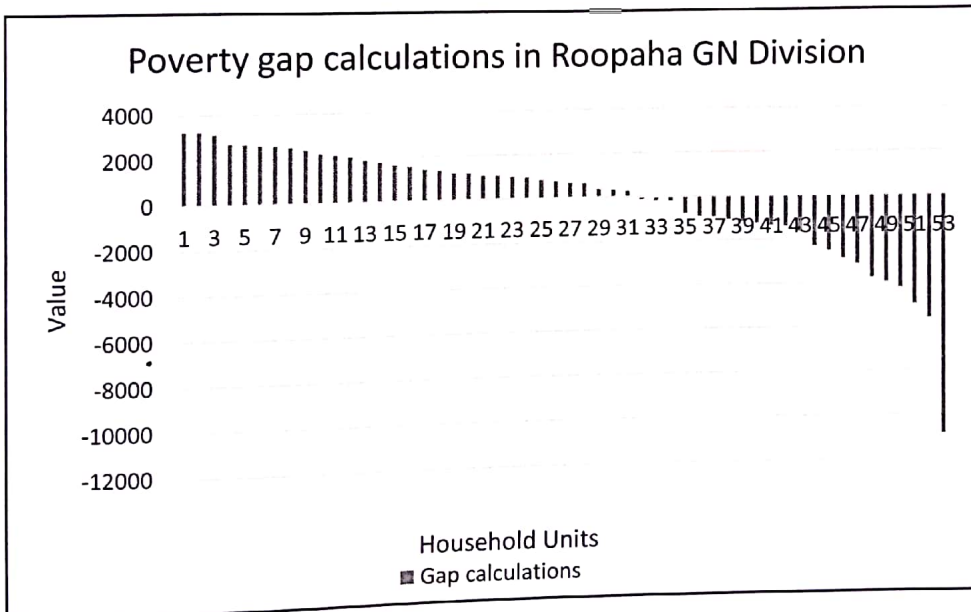
Analysis of Variance (ANOVA) test for the Income variation of the GN Divisions revealed that there was not any statistical difference between the values of the GN divisions which revealed the income equality in both GN Divisions. With the nearest spatial distribution of the GN areas the economic status wouldn't be much deviated in both GN areas. The basic measurement of Head count index also demonstrate the same level of poverty in both GN divisions with a high percentage of 58%. The poverty gap index also revealed the equal poverty level in the area which emphasize the above mentioned divisions revealed that range of poverty gap is considerably high in both GN divisions. Especially, the household units below the poverty indicate a high variation and the [Figure 1 and 2] above household level within the GN boundaries which were not significant in the basic statistical analysis.

Figure 1: Poverty Gap in Alakolawewa GN Division



Source: Prepared by the author using MS Excel 2013

Figure 2 : Poverty Gap in Roopaha GN Division

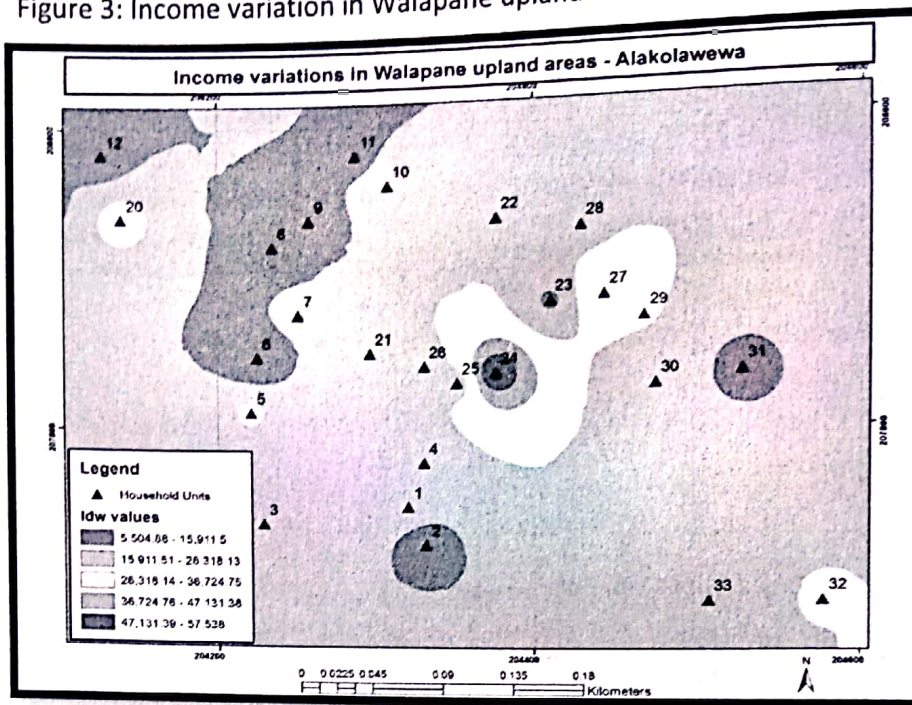


Source : Prepared by the author using MS Excel 2013

Even though the statistical analysis revealed the equality of the poverty level in the study area, spatial distribution demonstrate a different picture in study area. In alakolawewa, the zone of extreme poverty can be identified in the western half of the area which can be recognized as the highest elevated area in the region. [Figure 3] Trend surface analysis also confirm the above condition where poverty trend distributed from south west to North east. [Figure 4] In Roopaha region the zone of poverty remain highly in the eastern part of the division. [Figure 5] Further the trend of poverty demonstrate a south east to North West distribution pattern. [Figure 6] The overall results of the

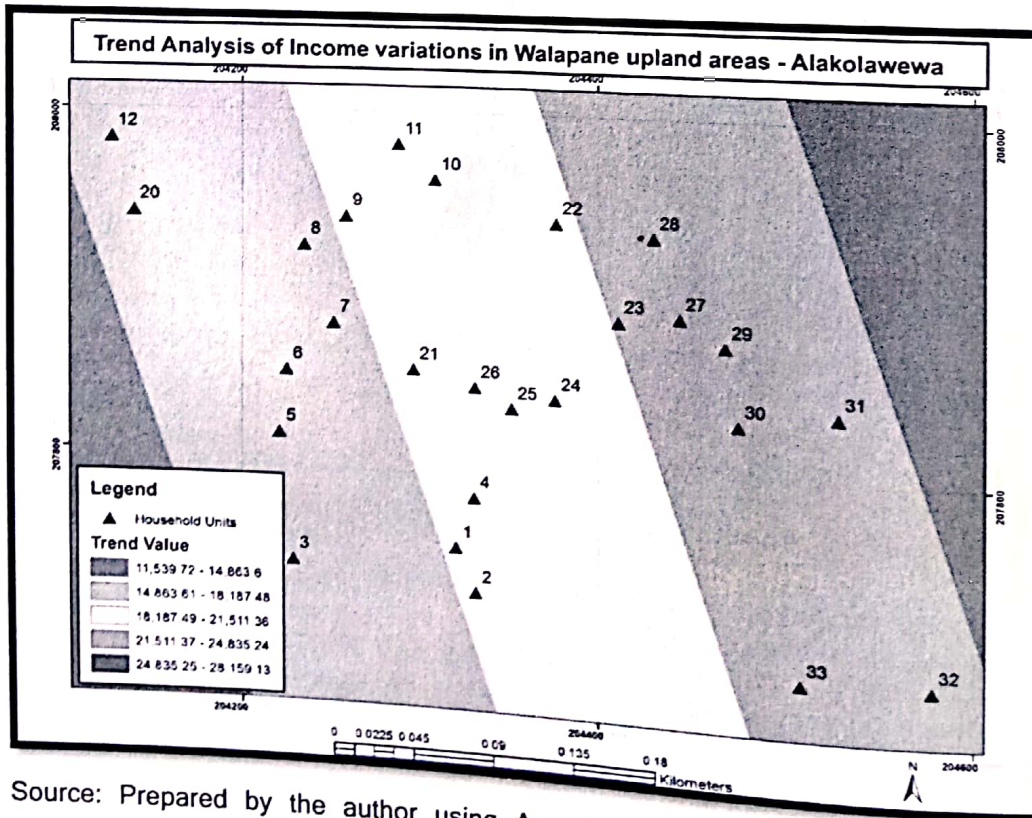
spatial distribution emphasize the spatial inequalities in both GN divisions which cannot be clearly identified through the statistical analysis on poverty.

Figure 3: Income variation in Walapane upland areas - Alakolawewa



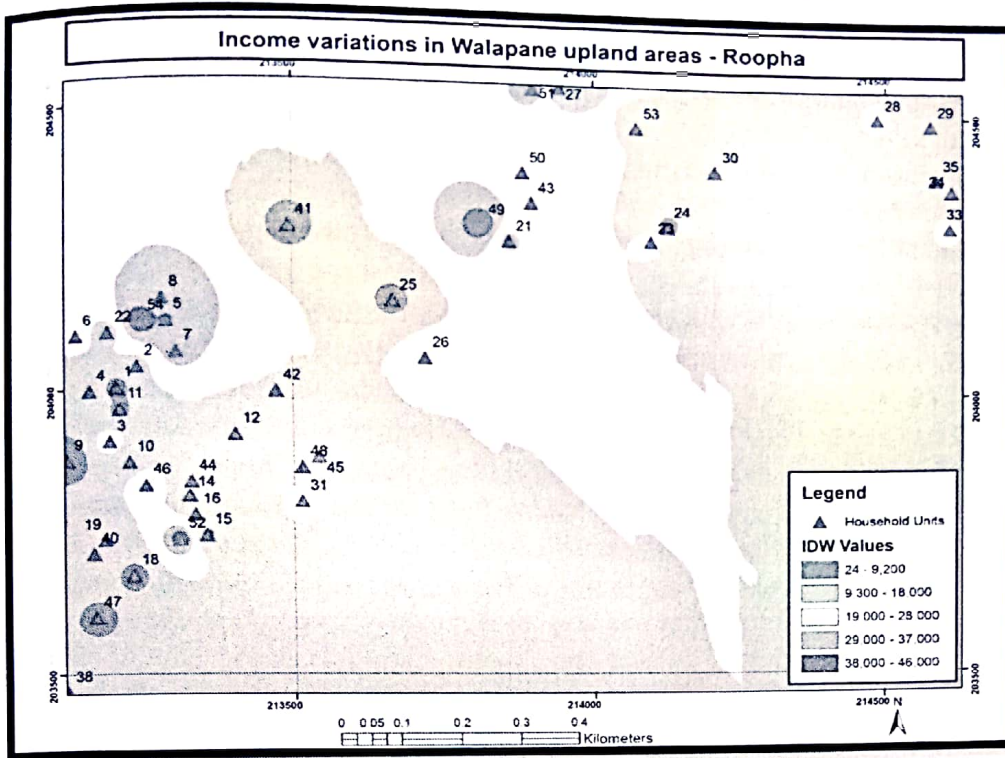
Source : Prepared by the author using Arc GIS 10.1

Figure 4: Trend Analysis of Income variations in Walapane upland areas - Alakolawewa



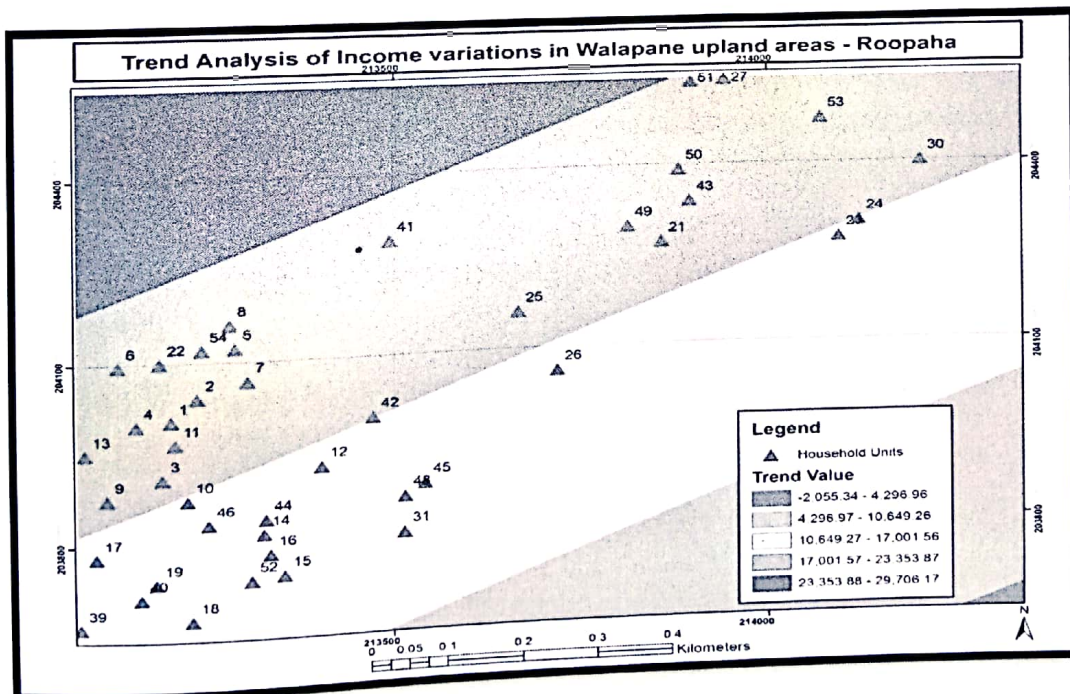
Source: Prepared by the author using Arc GIS 10.1

Figure 5: Income variation in Walapane upland areas - Roopha



Source : Prepared by the author using Arc GIS 10.1

Figure 6: Trend Analysis of Income variations in Walapane upland areas - Roopaha



Source : Prepared by the author using Arc GIS 10.1

Conclusion

As one of the main region with upland settlements, Walapane area remain as a less developed region in central province. The both selected GN divisions faced more and more into the poverty based issues with low income. Further the both areas reported relatively a high poverty value. The income diversification can't be statistically identified where the ANOVA values revealed the equal income levels and poverty levels. Those values are not significant enough to identify the income diversification of both GN divisions. Even the poverty level remains in an equal statistical value, The Spatial analyses that include in poverty analysis play a major role in recognizing the spatial distribution patterns of the poverty as well as the spatial inequality. The inequalities which were not clearly identified through the statistical analysis can be clearly recognized through the spatial analysis of poverty, the spatial perspective of the poverty focused the new dimensions of poverty analysis in micro level. Further, it should take into account other confounding factors that affect the poverty, including other socio-economic factors like education, Gender, Age structure, Health which will be provided more accurate measures of overall poverty with the spatial distribution patterns. Spatial analysis of the factors which were highly related to the poverty level, will be emphasize the new crossroads for poverty analysis.

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