Adjusting Monetary Measures of Poverty to Non-Monetary Aspects: An Analysis Based on Sri Lankan Data

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This paper reassesses the status of poverty in Sri Lanka using a monetary measure which was adjusted for people's perceptions about the social climate. Data collected by the Sri Lanka Integrated Survey was used to obtain incidences of poverty using cost of basic need (CBN) poverty lines and poverty lines adjusted for people's perceptions. The results reveal that the poverty measurements significantly differ with the two approaches though poverty ranking remains more or less consistent.

Key words: Measurement of Poverty, Social Climate, Sri Lanka

Poverty connotes the notion of deprivation of well-being. Economists are mostly concerned about the economic well-being of a population and tend to use monetary measures, i.e., either expenditure or income-based measures, to assess the status of poverty in a population. A poverty line, which is defined as the minimum level of expenditure/income needed to purchase the basic necessities of life, is used as the cut-off line to identify the poor versus the non-poor (Ravallion, 1994). The extent of poverty is shown by the incidences of poverty (or the Head Count Ratio which shows the proportion of persons with incomes below the poverty line), the depth of

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poverty (which shows average income of poor people), and the severity of poverty (which shows the weighted average income of poor people by giving higher weights to the poorest).

There is increasing recognition that the well-being of a population is determined not only by monetary aspects as measured by traditional indicators given above, but also by non-monetary aspects. For example, the well-being of a person living in the developing world can be determined by assessing whether the person has sufficient food, a place to live, access to clean water, feels safe and secure within his or her home and community, etc (see Lindenberg, 2002). The monetary measures of poverty can only partially accommodate the above factors and are therefore unable to fully assess the status of poverty in a population.

Acoording to Gunawardena (2003), even the best measure of monetary poverty leaves many dimensions of poverty unmeasured. They include (i) personal heterogeneities (people have different physical characteristics connected with disability, illness, age or gender, that make their needs diverse) (ii) environmental diversities (for example, climatic conditions, rainfall, flooding etc.) (iii) differences in rational perspective (someone relatively poor in a rich community may need a higher level of income to function than an absolutely poor person in a poor community) (iv) intra-household inequality, and (v) variations in social climate (this includes public facilities such as health care and education, the prevalence or absence of crime and violence, and the nature of community relationships).

Non-monetary measures, such as the capability approach (Sen, 1999), the social exclusion approach (Bradley et al. 2003) and the participatory approach (Chambers, 1994) have the ability

to capture many of these non-monetary aspects. Table 1 provides a comparison among different approaches. Amartya Sen argues that the 'capability to function' is what really matters for the status as a poor or a non-poor person. Sen defines 'capability' as the freedom that a person has in terms of the choice of functioning, given his personal features and his command over commodities. The concept of 'functioning' reflects the various things a person may value, doing or being. The scope of activities may vary from elementary ones, such as being adequately nourished and being free from available diseases, to very complex activities, or personal states such as being able to take part in the life of community and having self-respect. In this context, economic growth can be sensibly treated as an end itself. Development has to be more concerned with enhancing the lives we lead and the freedoms we enjoy. In effect, Sen argues that poverty cannot be properly measured by income or even by utility as conventionally understood. What matters is not the things a person has--or the feelings these provide--but what a person is, or can be, and does or can do (Todaro, 2003).

Even though the idea of measuring well-being by considering both monetary and non-monetary variables is hardly new, poverty analysts mostly use monetary measures and non-monetary measures in different contexts. The monetary based measures are highly quantitative and they are ideal to measure poverty at a national level using expenditure and income data collected by national surveys. Most non-monetary measures are highly qualitative, can accommodate perceptions of individuals and hence are ideal to measure poverty in a small region/community. The existing attempts to measure multiple dimensions of deprivation, which occupy relatively a smaller proportion in poverty literature, can be classified into two groups. The first group consists of aggregating various attributes into a single index through some arbitrary function and

defining a poverty line and associated poverty measures on the basis of that index. The aggregation of attributes in order to construct a multidimensional poverty measure at the individual level can be achieved in many ways. Methods vary from the simple addition of scores on indicators and domains to the calculation of weights for each domain/indicator. One such example is Lindenberg (2002), who used a participatory, rapid community assessment technique that identified the constraints to people's well-being as well as their assets and opportunities. An index was developed treating income and assets, food and nutrition, education, participation, water, sanitation, primary health and reproductive health. Each of the elements were ranked for availability, accessibility, quality and status on a five-point ordinal scale. Pradhan and Ravallion (2000) also used a similar conceptual approach. They used subjective poverty lines using qualitative assessments of perceived consumption adequacy on food, clothing, housing, transport, healthcare and schooling. The method was implemented for Jamaica and Nepal and it was found that the aggregate poverty measures implied by subjective poverty lines accord quite closely with existing "objective" methods, though notable differences emerged in the geographic and demographic poverty profiles.

The second group consists of specifying poverty lines for each dimension of poverty and to considering that a person is poor if he/she falls below at least one of these various lines. Bourguignon and Chakravarty (2003) used this approach and assessed poverty defined on income and education in rural Brazil, which is useful as policy makers want to define a poverty limit on each individual attribute. It was found that income poverty increased from 1981 to 1987, whereas education poverty fell. Multi-dimensional measures of poverty vary with substitutability and they are higher when more weight is given to education.

The aim of this study is to assess the status of poverty in Sri Lanka focusing on different dimensions of poverty. Though relatively small in size, Sri Lanka has a wide variation among regions in terms of access to basic facilities such as health and education. Also, due to civil strife over the last two decades, the risk of death and property loss is considerable in the affected regions, mainly in the North and East. Donor agencies encourage the Sri Lankan government to divert its welfare and investment activities to these regions of the country assuming households in the North and East are more vulnerable especially when the risk of life and property and the availability of basic facilities such as health and education is considered. Hence, an analysis of poverty using an indicator that can address dimensions such as access to basic facilities and risk is of importance to prioritize welfare programs in Sri Lanka.

The overall objective of this study is to develop an index to measure the multiple faces of poverty by blending the monetary approach and certain elements in non-monetary approaches and to use the index to quantify poverty at a national level. It involves giving monetary values for the perceptions of individuals regarding social climate (i.e., access to basic facilities and risk of life and properties for being in a community) and making adjustments to expenditure based poverty lines. The present paper does not develop a "multidimensional indicator" of poverty. Rather, it uses a hybrid measure that accommodates an objective monetary approach and subjective judgments on certain non-monetary aspects of poverty, which are of direct relevance to the country under consideration. Therefore, the paper is lies in between the studies on multidimensional poverty measurement and monetary measurement of poverty and it involves partial aggregation of different attributes of poverty.

The paper is organized as follows. The following section provides a background to the study highlighting the status of poverty in Sri Lanka as measured by monetary measures and the extent of regional disparities. The third section describes a method for measuring poverty to accommodate both monetary aspects and the perceptions of individuals. The fourth section describes how a conjoint analysis was performed to obtain the perceptions on social climate. The fifth section provides a detailed description on data. The sixth section compares poverty estimates using the two approaches. The paper ends with some conclusions and policy implications.

Background

Status of Poverty in Sri Lanka

By the beginning of this millennium, Sri Lanka attained the lower middle income country status with an average per capita income of US$ 860. Recent household surveys indicate that household income in all income quintiles and sectors has risen over the years with the growth of the economy (Consumer and Finance Survey, 2003/04). Even though the distribution of income as measured by the Gini coefficient had not changed significantly over the years, a sizable disparity in distribution of income across the provinces can be observed. Table 2 shows the mean household income and per capita income in different provinces and Table 3 shows the trends in poverty incidences. A visible disparity exists among provinces with the Western being the province with the highest average income and lowest poverty incidence and the Uva and Sabaragamuwa provinces recording the lowest average income and highest poverty incidences. Economic activity in Sri Lanka has, for many decades, been concentrated in and around the

capital city, Colombo, and its immediate suburbs. The share of the Western province in the country's GDP rose from around 40 percent in 1990 to 50 percent by 2000, even though the province accounted for only 29 percent of the nation's population. The regional disparities are due to sluggish agricultural growth and related activities, the concentration of free trade zones in the Western province and regional disparities in infrastructure and other facilities such as health and education[2] (Central Bank, 2004 and World Bank, 2004). The spatial disparity of poverty status is biased towards the predominantly agricultural provinces. According to Gunawardena (2000), the Western province with the smallest percentage of agricultural households (15.6%) has the smallest percentage of poverty incidences, and the reverse is true for the Uva province (75.9%).

Regional Differences in Social Climate

Sri Lanka is well known for its free provision of health and education facilities. According to World Bank (2004) Sri Lanka performs 'very good' in the Millennium Development Goals. At present, the net primary school enrollment rate is 96 percent and gender equality has been achieved at primary, secondary and even tertiary levels of education. Between the mid-1970s to 2001, infant mortality fell from 45 to 12 per 1000 live births while mortality rates of children under the age of five fell from 100 to 17 per 1000. A maternal mortality ratio of 92 per 100,000 live births was recorded during 1985-2002, which is comparable to maternal morality rates of developed countries (Human Development Report, 2004). However, government provisioning of basic health and education facilities are distributed in a skewed manner across the provinces.

[2] World Bank (2004) identifies three groups of provinces in Sri Lanka. Western is the highly active province. North Western, Central, Sabaragamuwa and Southern provinces are in the medium category. Northern, Eastern, North Central and Uva provinces are placed in the low activity category.

According to the Medical Statistics Unit of Sri Lanka (1999), of the 6,953 medical officers in the country, 2,086 served in Colombo district, whereas only 61 and 10 officers served in Monaragala and Kilinochchi and Mullativu districts which are located in economically backward provinces. Similar disparities can be observed in access to education. According to a school census conducted by the Ministry of Education and Higher Education in Sri Lanka, new admissions in 1998 were the highest in Colombo district (29,347) and lowest in Mannar district (2,192). Provision of other facilities such as electricity also shows wide disparities at the provincial level. According to the Consumer Finances and Socio-economic survey conducted in 1996-1997, the percentage of households having electricity is highest (76.8) in the Western province and lowest (39.7) in the Sabaragamuwa province. As a result, even though Sri Lanka performs well on average in health and educational status, significant disparities in such facilities can be observed among provinces.

Civil unrest has aggravated regional disparities significantly. An estimated 172,000 people live in refugee camps, which are called 'welfare centres', where conditions are appalling and people are deprived of basic-needs. Widows and female-headed households are also a growing vulnerable group, which is struggling for economic survival and social inclusion. Children and youth are the most vulnerable groups in the conflict and they have suffered due to violence and forced recruitment (Korf, 2001). Apart from income and expenditure poverty, people living in war-torn areas are psychologically poor due to risks associated with living in border areas, migrations/displacements taking place due to war conditions and poor access to basic facilities (health, education, electricity, etc.). Approximately 650,000 people in the North and East have been deprived of essential security, comfort and privacy of their homes. Infrastructure facilities

are poor in the war zone. Transportation is expensive and it is almost impossible to use public transport because only a few old and damaged mini buses are commuting between villages. Health facilities are also very poor. There is a severe shortage of all types of medicine, including basic antibiotics, vitamins and minerals. In these areas, no proper education has been available for children at least for the last five years. Teachers and children are displaced in various places and no facilities are available for children to study. No vocational training programs exist for school leavers or youth. At home, no proper food is available pushing youth towards the option of joining the militants (Sri Jayantha, 2003).

Measurement of Poverty

Given the bleak situation described above, monetary measures of poverty can easily under-estimate the status of poverty in a country like Sri Lanka. The next two subsections discuss an approach to conducting poverty analysis that incorporates peoples' perceptions on the social climate that would be potentially applicable in a context like Sri Lanka.

Measurement of Poverty using Monetary Measures

An absolute poverty line or a cost of basic need poverty line (CBN) is used in conventional poverty analysis to categorize households in to "poor" and "non-poor". Most countries, which have officially recognised poverty lines, define these in absolute terms, interpreting them as a fixed standard of living. In deriving absolute poverty lines, welfare is assumed to be linked to the consumption of goods and services. The basic idea in setting an absolute poverty line is to identify a basket of minimum essential consumption items. Those who do not have sufficient resources to obtain the basket are considered poor. There are various approaches for setting an

absolute poverty line. These mostly differ in terms of the decision about which goods to include in the basket. This decision is broken down into two stages. First a minimum food basket is chosen to obtain a food poverty line. Then some extra amount is added to the food poverty line to allow for essential non-food consumption.

(i) The Food poverty Line

There are two common approaches to setting the food component of the poverty line: least cost food poverty line and expenditure based food poverty line. The least cost food poverty line is obtained by selecting baskets of food items which are plausibly consumed in a given setting and then calculating which basket yields the specific calorie minimum at the lowest cost under prevailing prices. The cost of this basket defines the food poverty line. A disadvantage of this method is that it does not incorporate observed data on household consumption. Only the prices and the caloric contents of the food items are considered. There are significant drawbacks in the approach. First, people have strong preferences concerning food and will not necessarily purchase the cheapest calories available. Second, the process of determining the least cost basket can be very complicated.

The expenditure-based approach is the most commonly used method for establishing food poverty lines. The first step in this method is to specify an expenditure-based food poverty line in order to examine the actual food consumption patterns of some segment of the population. The foods consumed by this group are included in the basket, weighted by expenditure shares, and the quantities are then set so as to reach the minimum calorie level. One disadvantage of this approach is that it requires detailed survey data on food consumption, which measures not only

food expenditure, but also the quantities of food quantities consumed. In addition, in most developing countries, much of the food consumed by households, particularly in rural areas, is home-produced.

(ii) Non-food Expenditure

People who are able to afford their food requirements but lack the resources needed to purchase basic clothing and shelter would be considered as deprived in a basic sense. Thus, the non-food component too is included into poverty calculations. Non-food poverty lines can be obtained by directly choosing a non-food basket or by scaling up the food poverty line.

In the first approach, the non-food items that should be included in the basket are directly chosen. These items are priced and then the total gives an amount for total non-food expenditure. This total is then added to the food poverty line, which has already been developed to yield a final poverty line. An advantage in this approach is that it is simple and does not require detailed information about household consumption. This method is rarely used, although it is attractively straight forward, because it is viewed as paternalistic and arbitrary.

The observed consumption behaviour is considered in the second approach. The food poverty line is simply scaled up by some factor to allow the purchase of some essential non-food items to reach the final poverty line. The most commonly used method is to determine the average level of total expenditure of those people whose food expenditure is just equal to the food poverty line.

A Monetary Measure to include Perceptions on Social Climate

As Gunawardena (2003) very clearly indicated, even the best measure of monetary poverty leaves many dimensions of poverty unmeasured and variation in social climate is one such aspect. In this study, an attempt was made to value the social climate and the value was included in the poverty line as a part of non-food expenditure.

The willingness to accept (WTA) to live in different communities that have different access levels to health and education and different risk levels due to civil strife was used in valuing the social climate in this context. A conjoint analysis involving different attributes (access to health, access to education, risk to life and property, and income) and different levels (good, moderate, and bad) for each attribute was performed. Information regarding access to health and education facilities in different communities and risk to life and property were obtained for different communities. The CBN poverty lines in each district were adjusted for the social climate using the above values and the new poverty lines were generated. They were used to calculate the second set of poverty estimates. The following section presents the steps followed in detail.

Assessment of Perceptions on Social Climate

Conjoint analysis is one of techniques that can be used to assess the perceptions of individuals on the social climate. It is a multivariate technique that estimates the utility of the levels of various attributes or features of an object, as well as the relative importance of the attributes themselves (Hair, et. al, 2000). A major application of conjoint analysis has been in developing utility measurements for simulations. Conjoint analysis involves the measurement of psychological judgements (such as consumer preferences and acceptability) or perceived similarities or

differences between choices of alternatives and hence the name conjoint analysis, which implies the study of the joint effects. Consumers and decision-makers often think in terms of concepts, objects or solutions, rather than relative numerical values. Conjoint measurement permits the use of rank or rating data, when evaluating parts of attributes or attribute profiles. Controlled experiment is a method used to collect required data for the conjoint analysis. The experimenter controls the levels of explanatory variables and assigns a treatment consisting of a combination of levels of explanatory variables to each experimental unit and observes the response. In controlled experiments, the explanatory variables are often called factors or controlled variables.

In order to perform a conjoint analysis to obtain the perceptions on social climate, experimental data were obtained using a properly designed questionnaire in a controlled experiment. A stratified random sample of 100 undergraduate students at the Faculty of Agriculture, University of Peradeniya, Sri Lanka was drawn for the conjoint experiment. The questionnaire covered the possible hypothetical communities that could be obtained using the above attributes.

Monthly income is the continuous variable of the analysis. It was taken as the salary level that could be earned by living in a particular community. The levels for the salary attributes were derived using the distribution of income within the country. Accordingly, there are three levels for this attribute: (i) Rs. 10,000 per month, (ii) Rs. 15,000 per month, and (iii) Rs. 20,000 per month. As stated earlier, health and education facilities were ranked as good, moderate and bad. Descriptions showing the definitions of good, moderate and bad were provided. The location of the community also had three levels: war zone, border area and rest of the country. Accordingly, the conjoint analysis has four attributes and three levels for each attribute. The total number of

combinations that could be derived using them was $3^4 = 81$. Using fractional factorial design, it was reduced to nine combinations (Table 4). The above-mentioned hypothetical communities were given to the respondents to rank them according to their preference.

A regression model was developed next to study the effect of controlled variables on the response variable. It treats the rank (preference) as the dependent variable and access to health, access to education, location of the community and salary level as independent variables. The data were analyzed using an ordinal logistic regression model. The coefficients/part worths were obtained for each level of the design. The willingness to pay values were calculated for each level of the social climate. The tradeoff between those levels and the salary were obtained by multiplying the coefficient by the per capita middle level income.

Data

Secondary data to perform the conventional poverty analysis were obtained from the Sri Lanka Integrated survey (SLIS), carried out across all provinces of the country, between October 1999 and the third quarter of 2000 by the World Bank. It contains information on 7,500 households in 500 urban, rural, urban and state communities. In each district, communities had been selected randomly within each divisional secretariat and the number of communities is proportional to the population in that *Grama Niladari* Division. Fifteen households were selected within each community.

A community survey was used to extract data on the social climate. The communities were categorized in terms of their access to education, based on the following criteria: (i) availability of sufficient teachers, (ii) availability of sufficient facilities in the schools, and (iii) availability of a full range (from kindergarten to Grade 13) of classes in the schools within the community. Availability of health facilities and minimum time taken to reach the health facility were used to categorize the communities based on health facilities. The availability of health facilities were measured by the availability of doctors, nurses/auxiliary staff, medicines and simple diagnostic tests. In addition, their degree of availability was also taken into account. Accordingly, there are three basic levels of availability of health facilities as, (i) available at most times, (ii) available, sometimes, and (iii) not available. The communities have different means of accessing the health facilities, such as buses, bicycles, etc and some have no means of transportation. It was assumed that the time taken to reach the facility is more important than the means of transportation. Thus, the one-way time taken to reach the health facility is considered important in classifying the communities, and it has three levels: (i) easily accessible (takes less than 30 minutes), (ii) moderate level of time is taken (takes 30-60 minutes), and (iii) takes a long time to reach the facility (more than one hour). The effects of civil war were incorporated to the location component: the communities were classified as, (i) war zone, (ii) border areas, and (iii) the rest of the country.

Results and Discussion

Measurement of Poverty Lines using Cost of Basic Needs Method

The food poverty lines derived by Siddhisena and Jayatilake (2003) were taken as the food component of the CBN poverty line in each district. The food expenditure share was regressed

with demographic characteristics (household size, number of children below 10 years of age) and the total expenditure to test whether there are significant regional differences, but none of the coefficients were significant at the 0.05 probability level. Hence, it is assumed that the non-food expenditure share of the households is independent of the above factors and that they are considered as constants across a district. Using those values, poverty lines were derived for each district based on the Cost of Basic Needs method. The results of the analysis show that the CBN national poverty line was 1597.68 Rs./person/month (16.23 USD/person/month). The food and non-food expenditure data at the household level were used for the poverty analysis[3]. On average, nearly 45% of the Sri Lankan population is poor in terms of total expenditure. The district-wise poverty incidence analysis show that Kegalle and Moneragala are the first and the second poorest districts while Gampaha and Colombo are the first and the second richest districts (Table 5). Monaragala and Kegalle are agricultural districts with minimum growth potentials. Colombo and Gampaha are industrial districts with more employment opportunities in the manufacturing sector.

Relative poverty was assessed using the Gini coefficient (Figure 1). The highest inequality was found in the Central province of the country, which showed a low incidence of poverty in absolute terms. Western and Southern provinces have taken second and the third places respectively. The lowest Gini coefficient is recorded in the North Central province, which

[3] Following are the items in the non-food category: Housing taxes and rates, kerosene oil, firewood, electricity, LP Gas, Matches, Candles, Lanterns, Batteries (dry cell and other), other fuel, household cleaning articles, household services (wages paid to servants including drivers), dry cleaning, personal care items, (toothpaste, shampoo), soap (toilet and washing), razor blades, health expenses, sarongs, other clothing for men/boys, and girls, materials purchased in terms of length, saris, tailoring charges, household textiles, footware, other personal effects, kitchen utensils, social expenses (weddings, funerals etc.), transport fees, maintenance of private vehicles, communication, recreation and entertainment, other expenses

implies equal distribution of income compared with the other provinces. The second and the third lowest inequalities are found in North-East and Sabaragamuwa provinces.

Assessment of Perceptions and Assignment of Monetary Values

Categorization based on access to education shows that nearly 37 percent of the communities possess good education facilities and 25 percent of the communities have bad access levels to education. The remaining 38 percent of Sri Lankan communities do not have adequate education facilities within their communities (Figure 2). Categorization of communities based on access to health shows that only eight percent of the communities in Sri Lanka have adequate access levels to health and that over 60 percent of the communities lack proper health facilities (Figure 3). The communities were categorized into three groups as war zone, border area and the rest of the country. The war-affected and the border villages are present only in the North East, North Central and North Western provinces. Many districts in the Northeast are directly exposed to the risk of the war. The majority of border villages, which are at moderate risk, are in Mannar district and a few are in the Anuradhapura and Polonnaruwa districts.

The classification above shows that Colombo and Gampaha districts have the best levels of access to education and health facilities respectively. Vavuniya and Moneragala districts have the least levels of access to health and education facilities respectively. Aggregation of results into districts however conceals certain variations. For example, though some of the districts show good access levels to education and health, certain communities in those districts have very few basic facilities.

The willingness to pay ratios obtained from the conjoint analysis were multiplied by the median income levels to obtain the trade offs between community characteristics and the salary (Table 6). Results indicate that people are very reluctant to move to high risk areas and areas with less access to facilities. It was revealed that WTA are 1725.00, 1201.46 and 529.30 Rs/month/person (17.53, 12.20 and 5.37 USD/month/person) for moving in to a high risk area, to an area with poor education facilities and to an area with poor health facilities respectively (Tables 7). As the poverty analysis was based on the per capita expenditure, the above WTA values were converted into per capita expenditure by dividing them from the average household size.

Measurement of Poverty using Adjusted Poverty Lines

Using the above results the CBN poverty lines were adjusted for the five hundred communities in the sample. The adjusted district poverty lines were obtained by getting the weighted average of the community poverty lines treating population as weights.

Incidence, depth and severity of poverty increase significantly when community characteristics were incorporated into poverty lines. The national poverty line rose to 2466.36.Rs./person/month and poverty incidences increased in certain districts to more than 100% with such adjustments. District ranking changed with the adjustment slightly. Monaragala and Kegalle districts remain the first and second poorest districts and Colombo and Gampaha districts remain the first and second richest districts. The highest change in poverty incidences due to the adjustment was found in Ampara district, which suffers from inadequate access to basic facilities as well as the risk of war (Table 5).

Conclusions and Policy Implications

This analysis reveals that people have strong perceptions regarding characteristics of communities and as a result Sri Lankans are poorer when the social climate is also incorporated into poverty analysis. Contrary to general perception that the highest poverty incidences are in the war-torn areas, this analysis indicates that except for Vavuniya, higher incidences of poverty are recorded elsewhere (Monaragala and Kegalle) even if risk to life and properties are taken into consideration. Even though the highest WTA is recorded for high risk areas which could have resulted in higher poverty incidences in the Northeast, lack of basic facilities in certain areas such as Monaragala and Kegalle made such districts poorer than the districts in the Northeast.

The findings of this analysis, though suggestive rather than conclusive, lead to a number of policy implications. First, national poverty assessment exercises needs to consider non-monetary aspects of poverty, since the inclusion of such factors could result in different measures of poverty, though there are no significant changes to the rankings, especially where districts with the highest and lowest incidences are concerned. Second, as highlighted many studies, this study also confirms that the long run strategy to alleviate poverty will be the provision of basic facilities to communities in which they are lacking. Third, the study suggests that transfers in the form of salary increments to those who work in communities with poor access to basic facilities and high level of risk is a positive short term strategy in order to minimize out-migration.

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TABLES

Table 1: A Comparison of the Four Approaches to Poverty

Criteria	Monetary Poverty	Capability Approach	Social Exclusion	Participatory Approach
Unit of Analysis	Ideally the individual, de facto the household	The individual	Individuals or groups relative to others in their community / society	Groups and individuals within them
Required/ minimum standard identified by	Reference to 'external' information (defined outside the unit); central element food requirements	Reference to lists of dimensions normally assumed to be objectively definable	Reference to those prevailing in the society and state obligations	Local people's own perceptions of well-being and ill-being
Importance of process	Not essential increasing emphasis	Not clear	One of the main trusts of the approach	Criteria for achievement of satisfactory methods
Major weaknesses conceptually	Utility is not an adequate measure of well-being an poverty is not an economic category	Elements of arbitrariness in choice of basic capabilities, problems of adding up	Broad framework, susceptible to many interpretations, difficult to compare across countries	Whose perceptions are being elicited and how representative or consistent are they? Dealing with dis-agreements is also a problem
Problems for cross country comparisons	Comparability of surveys, price indices of drawing poverty lines	Fewer problems if basic capabilities are defined externally, but adding up difficulties makes comparisons difficult with inconsistencies according to adding up methodology	Lines of social exclusion essentially society specific; and also adding up problem	Cultural differences can make appropriate processes differ across societies, result may not be comparable
Major weakness	Needs to be anchored to external elements. Arbitrary	Impossibility with set evaluation and dealing with multidimensionality is difficult	Problems with multidimensionality. Challenge of capturing process	Comparability and representative

(Source: Oxford Development Studies, 2003)

Table 2: Average Monthly Household and Per Capita Income across Provinces (Rs/month)

Province	Household Income	Per Capita Income
All Island	12,803	3,056
Western	17,732	4,187
Central	11,175	2,623
Southern	11,229	2,598
North Western	10,918	2,717
North Central	9,926	2,437
Uva	10,388	2,528
Sabaragamuwa	8,439	2,036

Source: HEIS, Department of Census and Statistics in Sri Lanka, 2002.

Table 3: Percent of poor households across Provinces

Province	2002	1995/96	1990/91
All Island	19.2	24.3	21.8
Western	9.2	13.3	15.6
Central	20.8	31.3	25.8
Southern	23.6	27.0	24.7
North Western	22.3	23.6	21.6
North Central	18.1	20.14	20.4
Uva	31.8	40.2	27.0
Sabaragamuwa	28.9	36.1	26.8

Source: HEIS, Department of Census and Statistics in Sri Lanka, 2002.

Table 4: Hypothetical social climates used for Conjoint Analysis

Hypothetical social climates	Access to Education	Access to Health	Location of the Community	Salary Level
A	Moderate	Bad	Rest of the country	Rs. 15,000
B	Bad	Bad	War Zone	Rs. 20,000
C	Good	Moderate	Border area	Rs. 20,000
D	Good	Good	Rest of the country	Rs. 10,000
E	Bad	Good	Border area	Rs. 10,000
F	Moderate	Moderate	War Zone	Rs. 10,000
G	Bad	Moderate	Rest of the country	Rs. 15,000
H	Good	Good	War Zone	Rs. 10,000
I	Moderate	Bad	Border area	Rs. 15,000

Table 5: Comparison of HCI in CBN and Adjusted CBN Approach

Code	District	CBN		Adjusted		Percentage
		HCI	Rank	HCI	Rank	**Increase**
1	Colombo	23.86	22	30.23	23	26.70
2	Gampaha	23.11	23	50.34	22	107.83
3	Kalutara	41.02	17	61.85	21	50.78
4	Kandy	41.99	16	67.71	18	61.25
5	Matale	50.45	5	85.00	5	68.48
6	Nuwara Eliya	35.71	19	69.04	17	93.34
7	Galle	47.56	9	63.41	20	33.33
8	Matara	44.14	13	71.72	14	62.48
9	Hambantota	42.60	15	74.35	11	74.53
10	Jaffna	48.80	7	84.88	6	73.93
11	Mannar	43.40	14	74.17	12	70.90
12	Vavuniya	60.95	3	91.90	3	50.78
15	Batticaloa	48.69	8	83.89	7	72.29
16	Amparai	34.41	20	73.54	13	113.72
17	Trincomalee	49.27	6	83.38	8	69.23
18	Kurunegala	45.62	11	71.65	15	57.06
19	Puttalam	32.28	21	65.35	19	102.45
20	Anuradapura	37.04	18	70.74	16	90.98
21	Polonnaruwa	44.27	12	78.12	10	76.46
22	Badulla	46.18	10	80.55	9	74.43
23	Moneragala	67.96	2	96.60	1	42.14
24	Ratnapura	57.89	4	87.54	4	51.22
25	Kegalle	67.97	1	92.17	2	35.60

Table 6: Regression Coefficients for Different Levels of Social Climates

Criteria	Level	Coefficient
Education	Moderate	2.094
	Bad	4.937
Health	Moderate	0.319
	Bad	2.175
Location	Moderate	1.720
	Bad	7.090
Salary	Moderate	1.641
	Bad	1.868

Table 7: Willingness to Pay and Trade off Results

Criteria	Level	Coefficient	WTP	Trade off
Education	Moderate	2.094	-1.276	509.59
	Bad	4.937	-3.009	1201.46
Health	Moderate	-0.319	0.194	77.63
	Bad	2.175	-1.325	529.30
Location	Moderate	1.720	-1.048	418.58
	Bad	7.090	-4.321	1725.41

FIGURES

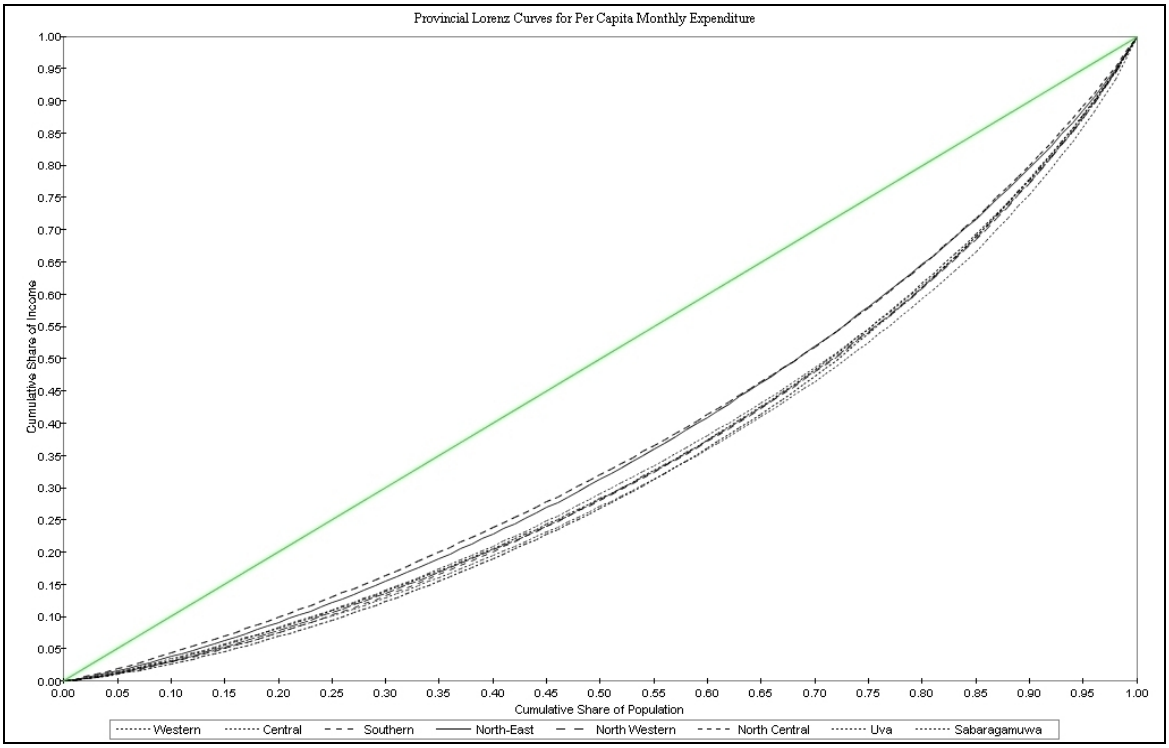

Figure 1: Provincial Lorenz Curves for Sri Lanka

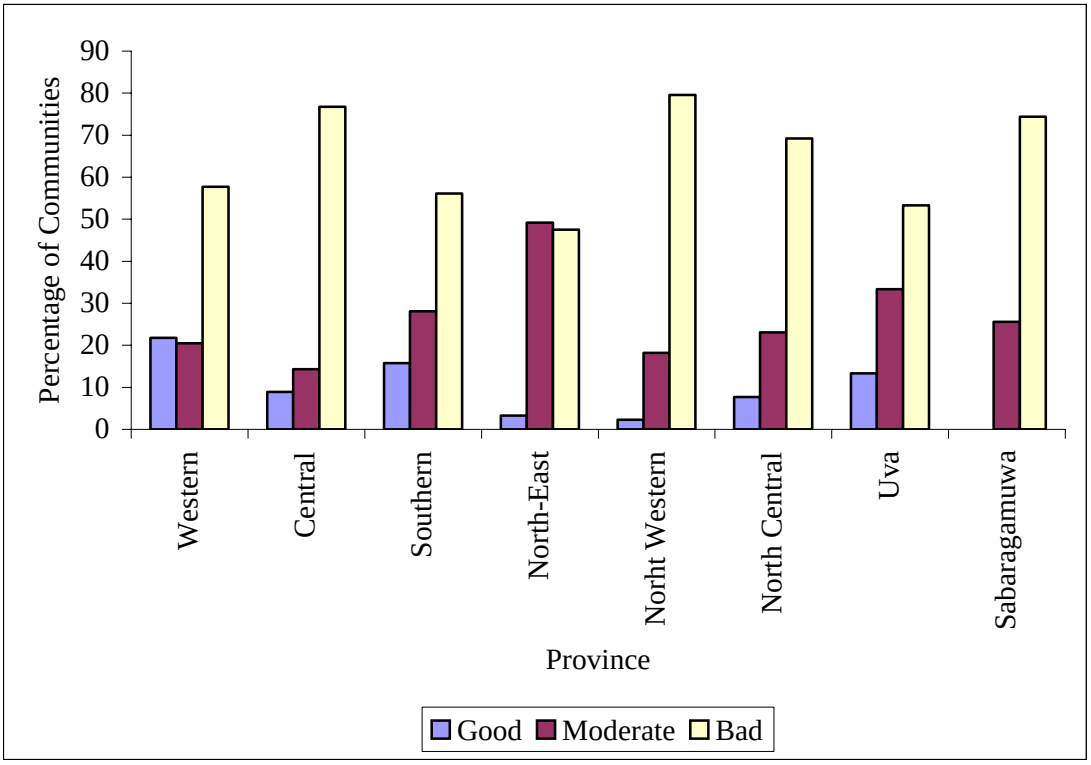

Figure 2: Provincial Levels of Access to Education

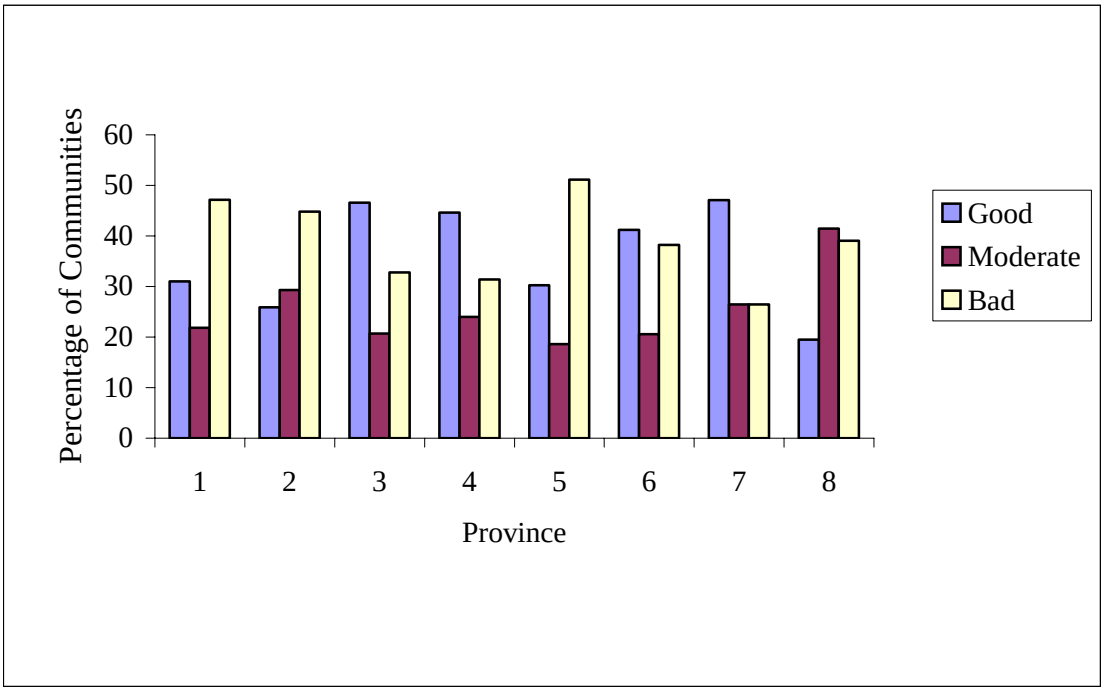

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Figure 3: Provincial Access Levels to Health in Sri Lanka