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Consumption Poverty in a Time of Post Conflict: Factors Associated with Poverty in Eastern Province

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***Abstract*- Eastern Province appears to have the highest level of poverty in the latest statistics, though the economy of the region has the potential to grow and diversify. The dreadful conflict contributed to loss of life, displacement, migration of people, damage to physical resources and infrastructure, disruption of services and loss of livelihoods. With the end of civil war in East, the government as well as the non-government organizations have extended their rehabilitation and reconstruction work to this area. Poverty reduction is now at the core of development policy making and a key commitment of donor agencies. It is extremely important in the current period to identify what characteristics of the poor are likely to hamper the poverty alleviation strategies and to address these in order to maximize the benefits of current policy. Hence, this study tries to identify the factors associated with the level of poverty. This paper uses household income and expenditure survey data during the period 2009-10, and finds that the household size, level of education, place of location, type of dwelling and other facilities are the major contributing factors to the level of poverty. This study demonstrates that anti-poverty programmes should focus on these above factors when implementing policies.**

***Keywords*—poverty, profile, factors, probability, post-coflict**

I. Introduction

The main objective of this study is to analyse poverty and associated factors in Sri Lanka's Eastern Province. While the Eastern Province is well-endowed with natural resources and has always had a huge potential for growth, its attainment was adversely affected due to the prolonged conflict. For example, the province's endowment of natural resources includes long stretches of beautiful beaches, calm seas and wildlife and ecological conservation areas which can support a vibrant tourism industry. Potentially highly productive agricultural land, livestock and fishery resources can enhance incomes with agriculture and other trade and commercial activities. However, the protracted armed conflict has seriously affected the provincial economy causing the region to become one of the most economically backward in the country. The latest published poverty figures show that the Eastern Province has the highest rate of poverty in the county. Therefore it is timely to study the poverty situation in the Eastern Province.

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The development literature identifies three primary factors associated with poverty, namely demographic factors, educational factors and employment factors (Bokosi and Fanwell, 2006; Kubi et al., 2007; Mok et al., 2007; Hussain and Menka, 2010; Archia et al., 2010; Ranathunga, 2010). In addition to these socio-economic characteristics, war has undoubtedly contributed to the present economic status of the Eastern Province. The study also seeks to identify if any other socio-economic factors could have contributed to poverty significantly.

The rest of the proposal is organized as follows. Section II justifies the research. This is followed by sections devoted to the theory and empirical evidence. Methodology including types of data, data sources and analytical techniques are in section IV. Findings of the research are highlighted in the section V. Section VI concludes the paper.

II. Justification

Poverty in Sri Lanka had been high and widespread over a long period. It was 26 per cent when the Millennium Development Goals (MDGs) agenda was formulated in 2000. Now, however, Sri Lanka has been termed an "Early achiever" for achieving MDGs targets, including recording a national poverty rate of 8.9 per cent in 2010 (Department of Census and Statistics, 2011). Reduction of poverty levels in the period 2006/2007 to 2009/10 has, however, been unequal across regions with the most striking contrary trend shown in the Eastern Province. This has been especially the case in Batticaloa District where poverty seems to have risen from 10.7 per cent in 2006/07 to 20.3 per cent 2009/10 (in Ampara the change is very minimal from 10.9 per cent to 11.7 per cent; no comparable data exists for Trincomalee for the first data point, although poverty levels were reported as being 11.7 per cent in 2009/10).

Within this situation, the question naturally arises: What are the relative contributions of demographic, educational and employment factors in causing individuals to still be poor in Eastern Province, despite the vast reduction in poverty in the country as a whole?

III. THEORY AND EMPIRICAL EVIDENCE

There are many poverty measures (FGT measures, Sen, Kakwani, Thon, Takayama, etc.) that have been developed to measure different dimensions of poverty. Literature cites many groups of factors that are correlated with the level of poverty, positively or negative, and strongly or weakly (Datt and Jolliffe, 2005; Knight and Shi, 2006; Meng, et al., 2007; Silva, 2008; Grounder, 2013;).

Age has an important role in determining participation in income generating and productive activities. The young have more potential, energy and capabilities to improve their standard of living, whereas children and elderly are poorer, in addition as their food and medical expenditures are high (Siddiqui, 2009). Gender of household members significantly influences household poverty, with poverty among females tending to be higher than males (Bein, and Mugarura, 2006; Ranathunga, 2007; Silva, 2008). Meng et al. (2007) show the significance of education to poverty in urban China. They noted that human capital accumulation reduces poverty. In Awan et al.(2011) further education is stressed in breaking the vicious cycle of poverty. The nature of employment is also correlated with household poverty. Generally, the unemployed are much poorer than the employed in developed countries (Dekkers, 2008; and D'Ambrosio et al, 2009).

IV. Methodology

The study is based on Department of Census and Statistics(DCS) Household Income and Expenditure Survey (HIES) data set for 2009/10, a nationally representative survey covering three districts in Eastern Province namely Batticaloa, Ampara and Trincomalee, consist 2115 households and 8737 individuals. The poverty line (calculated by DCS based on real per capita consumption expenditure) is Rs. 3028, and is used throughout this analysis as the cut-off to define the poor, using the individual rather than the household as the unit of analysis.

The formula to compute an FGT measure of poverty is:

$$P\alpha = (1/n)\ \Sigma x < z\ [(z - xi)/z]\alpha\ ;\ \alpha \geq 0 \qquad (1)$$

where x is real per capita consumption expenditure, z is the poverty line, n is the size of the population, P is the poverty measure which is (a) the Headcount Index when α is zero (b) the Poverty Gap Index when α is 1 and (c) the Squared Poverty Gap Index when α is 2. All three measures are used in formulating the poverty profile of Eastern Province for 2010.

A poverty profile describes the pattern of poverty, but not the effect of each of the factors on the level of consumption expenditure. But, the regression analysis commonly used to identify the roots of poverty and identify the effects of each of the characteristics on per capita expenditure. This study follows de Silva (2008) and deploys a logic model to estimate the probability of being poor from a vector of independent variable, *X*. The binary dependent outcome *P* takes the value '1' if individual is a poor, and '0' if the individual is non-poor.

The following model is used in this study,

$$\Pr(WP = 1 \mid X) = F(\alpha + \beta X), \qquad (2)$$

Where $F(z) = e^{Z}/(1+e^{Z})$ is the cumulative logistic distribution and the parameters β are estimated by maximum likelihood. It should be noted that the model is not principally concerned with explaining the causes of poverty. Instead, it only seeks to identify the variables associated with poverty.

V. Key Findings

The poverty prevalence in Eastern Sri Lanka is considerably high (14.8 percent) when compared to other parts of the country. Table 1 shows the poverty profile with respect to different individual characteristics. In Eastern Sri Lanka, the poverty prevalence among Tamils is high compare to other communities since they have been most affected by the prolonged conflict. Even though Sinhalese and Moors were indirectly affected by war, the loss of human, physical, financial, social and psychological assets were highest among Tamils. Gender and age are also main demographic characteristics in determining poverty. The results show that the incidence of poverty is actually not significantly varied based on gender of the individual. The finding is particularly justifiable given that there are many war widows and women headed households because of 30 years of war in this research area. Moreover, the fact that females are poorer than males in Eastern Sri Lanka is not consistent with the findings of de Silva (2008) and Gunawardena *et al*(2007) for the Sri Lankan population on the whole.

The age of the individual is highly correlated with the incidence, depth and severity of poverty, with children and elders more affected than the young and adults who have ample access to resources and greater physical strength; the poverty gap index also shows the poor elders are closer to poverty line than poor children. Married and widowed women have the lower poverty rates compared to women never married or separated. This makes sense in light of the fact that widows and their children can have more benefits from the government and non government organization while the unmarried or separated do not have access to such benefit.

According to Table 1, there is a significant negative correlation between educational level and poverty prevalence. The individuals that have no schooling and

primary education are poorer than others. As a general rule, the unemployed are poorer than employed, and among the employed poverty prevalence is high among unpaid family workers and private sector employees. Another important characteristic is housing related facilities. People living in flats have a headcount two times higher than people living in a single house. Those with access to electricity as the principle source of lighting have only 8.8 per cent head count, while kerosene and solar users have head count of 35.2 percent and 34.8 percent respectively. They are far from the poverty line as indicated by high level of poverty gap index. The individuals who are using gas as cooking fuel have lower poverty levels compared to firewood users, who are 15 times higher (see table 1). Hence the poverty profile is more useful to identify which household or individual is poor and plans to give grants only to those in are chosen target group.

The marginal effects for a group of selected variables from equation (2) are presented in the table 2. The same set of variables already used show the poverty profile in table 1. In both cases the results are consistent. Here, it only discusses the significant results. First, there is a significant negative correlation between the level of an individual's education and the probability of being poor. Many scholars have found that there is a negative correlation between poverty and education because education has positive impact on productivity and wages (Ranathunga, 2007; de Silva, 2008; Dekkers, 2008; Knight and Quheng, 2009; Hyder and Sadiq, 2010; Archi et al., 2010; Akarro and Mtwene, 2011). Human capital theory holds that education improves human capital and increases earning capacity. Household size is another factor strongly correlated with poverty. In Sri Lanka, the average household size is 4.0 and it is 4.9 in Eastern Province.

The place where people are located is another significant factor. It is a general phenomenon that compared to rural people, urban people have a lesser probability of being poor. According to the table 2, the value of marginal effect 0.05863 of Moor shows increases in the Moor population lead to significant increases in the probability of being poor. Never-married individuals are also significantly correlated with being in poverty. Individuals who are working in the semi government sector significantly reduce the probability of being in poverty. Generally, they have more advantages than government sector employees as well as more job security than private sector employees; hence, the stable income and benefits protect them from fall into poverty.

The marginal effect of the value of the type of dwelling and related facilities like sources of light and cooking fuels is significant. The people who are living in flats are more likely to poor. Eastern province was one of the places heavily affected by 2004 Tsunami, most lost their housing, so government constructed flats and accommodate them with fewer facilities. Hence, the finding is really justifiable with the post Tsunami and post war situation. According to the table 2, individuals who are using electricity and gas for cooking fuel are less probability to being a poor. Hence, access to housing facilities are most important factor in the poverty reduction process.

TABLE 1: POVERTY PROFILE OF INDIVIDUALS IN EASTERN SRI LANKA

Descriptions of individual	α=0	α=1	α=2
Ethnicity			
Sinhalese	15.0	2.9	0.9
Tamils	22.1	5.5	2.0
Moors	7.6	1.1	0.3
Gender			
Male	14.7	3.2	1.1
Female	15.0	3.3	1.1
Age distribution			
Below 5	12.6	2.6	0.8
Children (age 5-14 years)	18.8	4.3	1.5
Young (age 15-34 years)	14.5	3.2	1.1
Adults(age 35-54 years)	12.5	2.7	1.0
Old(age 55-74 years)	13.1	2.7	0.8
Above 75	18.7	2.7	0.6
Marital status			
Never married	18.0	4.0	1.5
Married	13.0	2.6	0.8
Widowed	10.5	2.7	0.9
separated	14.1	3.4	2.0
Level of Education			
No-Schooling	19.9	4.7	1.4
Primary(Grade 0-5)	19.3	4.4	1.6
Secondary(Grade 6-10)	14.4	3.2	0.6
O/L(Grade 11)	11.2	2.0	0.3
A/L (Grade 12-13)	9.4	1.2	1.4
Status in Labour Market			
Employed	13.6	2.9	1.0
Unemployed	16.1	3.3	1.0
Employment Status			
Government Employee	7.1	0.8	0.2
Semi Government Employee	2.1	0.7	0.2
Private Sector Employee	17.8	3.8	1.3
Employer	12.0	2.7	1.0
Own account worker	4.1	0.6	0.1
Unpaid family worker	20.2	5.5	1.7
Type of House			
Single House	14.9	3.3	1.1
Flat	27.2	1.1	0.1
Attached house/Annex	12.1	0.1	0.0
Principal source of Lighting			
Kerosene	35.2	8.8	3.1
Electricity	8.8	1.5	0.5
Solar	34.8	10.4	3.3
Principal source of cooking- fuel			
Firewood	17.3	3.8	1.3
Gas	1.4	0.0	0.0
Kerosene	5.8	1.4	0.0

TABLE 2: FACTORS ASSOCIATED WITH THE PROBABILITY OF BEING POOR- MARGINAL EFFECT OF LOGIT REGRESSION ESTIMATION

Independent Variable	dy/dx(marginal effect)	z-value
Continuous variable		
Age	.0000561	0.24
Education	-.0036658	-5.49
Household Size	.0210307	14.50
Discrete Variable		
Male	-.0052687	-0.93
Urban	-.0178362	-3.00
Employed	-.0156366	-0.74
Sinhalese	.0586319	1.18
Moor	.0586319	8.86
Married	.009781	0.87
Never Married	.0275555	2.82
Widowed	.0051928	0.27
Government	.0043896	0.15
Semi-Government	-.049832	-2.93
Private Sector	.0204267	0.72
Employer	.0102508	0.17
Owner	.0128284	0.45
Single house	.031796	2.80
Flat	.447373	4.12
Kerosene(Light)	-.0375433	-3.45
Electricity	-.2619222	-5.52
Firewood	.001061	0.05
Gas	-.0738845	-7.62
Kerosene(cooking-fuel)	-.0280099	-1.76
Log likelihood = -2192.1307	N=7562	
Pseudo R2 = 0.2219	Prob >chi2 = 0.0000	

Note:

The omitted categories in the dummy variable analyses are: Female, rural, unemployed, Tamils, separated or divorced, unpaid family worker, annex or slum, solar or generator, electricity or paddy husk.

5. Conclusion

This study describes the current poverty profile and the factors associated with the level of poverty for Eastern Sri Lanka. Demographic, education, employment and housing facilities have emerged as important correlates of poverty, which has important policy implications in designing and implementing new poverty alleviation programmes. For instance, greater human capital reduces poverty. Children and elders are more vulnerable to poverty. Hence, future policies should be pro-poor, especially targeting children, and the welfare of the elderly.

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