

Patterns of gendered household asset deprivation in the context of a post-war rural economy: An unconditional quantile regression approach

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Introduction

Eastern Province of Sri Lanka has been the stage for a violent and protracted civil war between the Government of Sri Lanka and the Liberation Tigers of Tamil Eelam (LTTE) for almost three decades. In transition to post war peace since 2009, the province has recorded high macro-economic growth rates in the initial phases of the post-war period²⁸. Despite such progression, there are reports indicating household based inequality and deprivation in the post war region (FOKUS Women, 2015; International Labour Organization, 2013; United Nations Sri Lanka & CEPA, 2015). Given that in post war situation asset deprivation is known to emerge across gendered headship and act as grounds for vulnerability (Adelman & Peterman, 2014; Krishna, 2001; Lastarria-Cornheil, 2005; Sorensen, 1998). It is important to take analysis beyond income and expenditure measures. However, as gendered asset ownership situations are vastly under researched in the post-war Sri Lankan context, what influences asset inequalities between household clusters is not clear. Oversight of such increases gender based injustice and affects well-being conditions of households leading to overall underdevelopment (UN Women, 2012). Filling this void, this study empirically examines determinants of household owned assets moving away from the traditional utility maximizing explanations of income and expenditure and situates the analysis within broader spectrums of rural asset ownership and social divides linked to gendered headship.

Methodology

Data on family ownership of assets representing multiple dimensions of tangible and intangible assets linked to education, land, household physical capital assets, financial assets and social capital assets were collected from 351 households from 8 *Grama Niradhari* divisions in the districts of Trincomalee, Batticaloa and Ampara of the Eastern Province. The sample is a random selection of households proportionate to the ethnic compositions of the province and disproportionate

²⁸ The annual average growth rate between 2009 to 2014 for Eastern province was 6.1%

across gendered household headship. Applying procedures proposed by Asselin (2009) for Multiple Correspondence Analysis, assets were aggregated into indices to reflect overall individual and household wellbeing. Using the asset index as the dependent variables an unconditional quintile regression was established with ten (10) row vector of determinants in linear form as depicted in Equation 1 and Equation 2.

$$\ln(A_i^{Female}) = \beta_0 + \beta_{1i}X_{1i} + \beta_{2i}X_{2i} \dots + \beta_{10i}X_{10i} + \varepsilon \quad (1)$$

$$\ln(A_i^{Male}) = \beta_0 + \beta_{1i}X_{1i} + \beta_{2i}X_{2i} \dots + \beta_{10i}X_{10i} + \varepsilon \quad (2)$$

A: log of Asset index of household i, F:female headed M:Male headed

Where, X_{1i} : household heads age in log form, X_{2i} : household unemployment, X_{3i} : Female intra household decision making index in log form X_{4i} : ethnicity, X_{5i} : household in a military controlled area during war or not, X_{6i} : number of girl children in family (more than 2 or not), X_{7i} : number of boy children in family (more than 2 or not), X_{8i} : cohabitation, X_{9i} : the log of access to public services index (depicting satisfactory access to health, transportation, livelihood extension service and communication).

To uncover the effect of the determinants of assets on various points of the female and male asset distribution functions, the study uses Firpo et al.'s (2009) method which relies on re-centered influence function (RIF) regression implemented within the unconditional quantile regression approach. At each quantile, the coefficients on covariates (X) for the asset index is estimated by regressing the RIF on the covariates as following:

$$q_{g,\tau} = E_X\{E[RIF(A_i^g; q_{g,\tau})|X_g]\} = E[X_g] \hat{\delta}_{g,\tau}, \quad g \in \{F, M\} \quad (3)$$

Where, $q_{g,\tau}$ is the unconditional τ^{th} quantile of log asset index female(F) and male(M) headed households, $g \in \{F, M\}$ and $\hat{\delta}_{g,\tau}$ is the coefficient of the unconditional quantile regression which captures the marginal effect of a change in distribution of covariates (X) on the unconditional quantile of the log asset index. Firpo et. al (2009), mathematically proved that the unconditional quantile regressions coefficients have an unconditional interpretation similar to ordinary least square (OLS) coefficients.

Results and discussion

Households headed by elderly females and female-headed households in the districts of Batticaloa and Trincomalee were asset poor in contrast to other types of households. Female headed households with access to satisfactory levels of public goods and services, those that were resident in a military controlled area during war, households headed by a cohabiting partners and male-children fertility mitigated asset poverty. The impact of cohabitation is such that cohabitation even in a de facto state increased assets to female-headed households bring them into the 4th and 5th quintiles (asset rich). For both the asset rich and asset poor female-headed households, belonging to Tamil or Muslim ethnic

groups reported significantly low asset holdings compared to Sinhala female-headed households throughout the distribution. Though male-child fertility remained important for both the asset rich and poor female headed households, the intensity drops in the asset richer households.

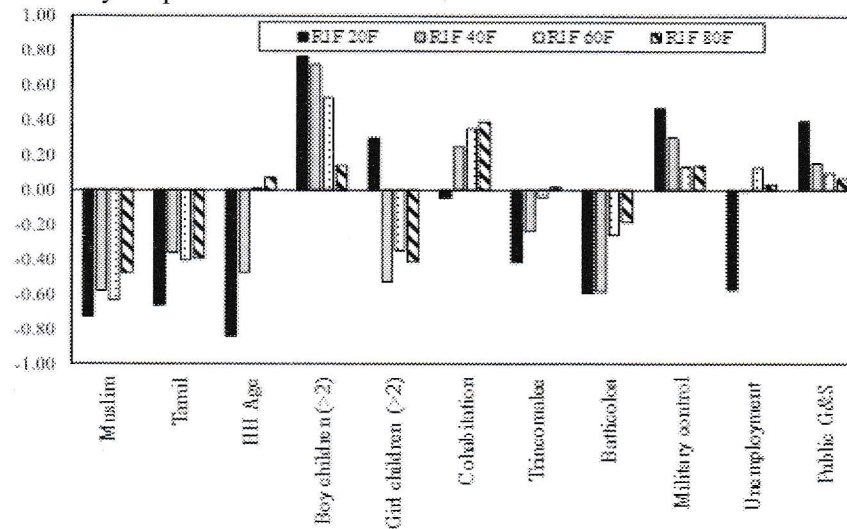


Figure 1 Marginal effects of a covariate change for the female-headed households

Among asset poor male-headed households in the lower quintiles, male-child labor, residency in military controlled area and access to public goods and service mitigated their asset poverty for some extent. In contrast, old age, unemployment, residency in districts of Trincomalee and Batticaloa and belonging to ethnic groups. Tamil and Muslim intensified asset poverty for the male-headed household. However, among asset richer male-headed households' ethnicity, age and residency (in Batticaloa, Trincomalee and in former LTTE controlled or border area) though remained to have a negative relationship with asset accumulation appears to have diminishing marginal effects (and not statistically significant). Thus, among the asset rich, ethnicity, number of male children, age and residency does not act as social and economic divides. The findings also show that cohabiting male-headed households, similar to their female-headed counterparts are likely to be concentrated in the 3rd to 5th quintiles, which depicts the asset rich cohorts.

While asset accumulation considerably reduces ethicized inequality among male-headed households it is unlikely to remove ethicized inequalities among female-headed households. Thus, gendered headship interacts differently with social divides such as ethnicity. Household unemployment though remains a major impediment to asset accumulation among male-headed households does not seem to impact asset accumulations in female-headed households. Female property inheritance regimes could be a partial explanation for this observation.

Male child fertility/labor seems to remain crucial throughout various points of the female-headed asset distribution unlike in the male-headed household asset distribution. The dependence on male-child labor for income and livelihood support in female run households is the likely reason for this observation.

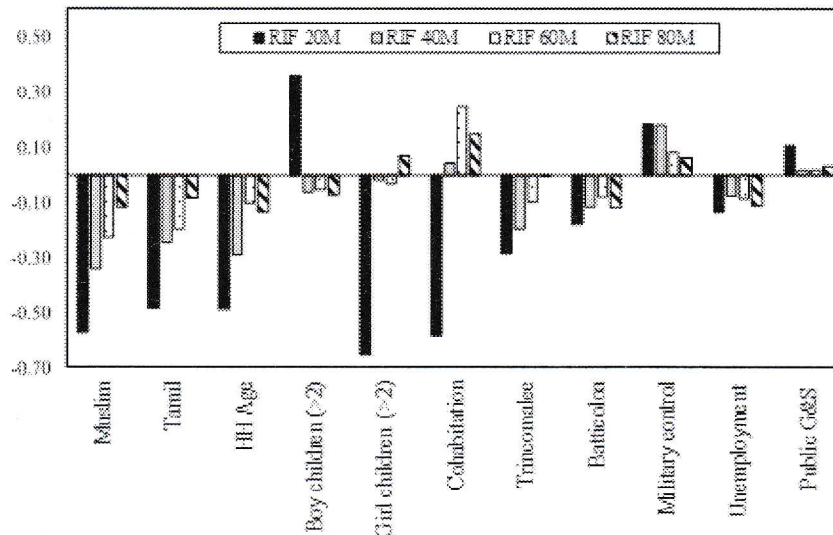


Figure 2 Marginal effects of a covariate change for the male-headed households.

Conclusion

This study shows that the determinants of household assets behaves differently along various points of an asset distribution. The major covariate differences across the male and female-headed household asset distributions stems from ethnicity, the role of the male child in the household and from how unemployment is responsive to assets.

Post war asset generation policies should focus on former LTTE held areas in districts of Batticaloa and Trincomalee. Another gendered intersection to look for is age and cohabitation status. While older male and female-headed households are more likely to be asset deprived, *de jure* female-household heads appear to be severely asset deprived than *de facto* cohabiting female-headed and cohabiting male-headed households. Thus, this study finds that inequality and deprivation of assets intersect with gendered headship and other divides such as ethnicity, cohabitation and age. Therefore, fit-for-all asset generation policies that overlook gendered aspects and gendered intersections do not work well in the post war Sri Lankan context.

Keywords: Assets, gendered headship, intersections, post conflict, RIF regression.

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Appendices

Table 1 Female-headed households -RIF regression results

| | RIF 20 | RIF 40 | RIF 60 | RIF 80 |
|---|-------------------|--------------------|--------------------|--------------------|
| Muslim (<i>base: Sinhala</i>) | -0.73** (0.26) | -0.58** (0.14) | -0.63*** (0.12) | -0.48*** (0.12) |
| Tamil (<i>base: Sinhala</i>) | -0.66* (0.29) | -0.36* (0.14) | -0.40** (0.14) | -0.39** (0.14) |
| Household head's age (<i>log</i>) | -0.84 (0.49) | -0.48* (0.20) | 0.01 (0.19) | 0.07 (0.17) |
| More than 2 boy children (age<18 years) (<i>base: less than 2 or 2 boy children</i>) | 0.77* (0.36) | 0.72** (0.27) | 0.53 (0.33) | 0.14 (0.21) |
| More than 2 girl children (age<18 years) (<i>base: less than 2 or 2 girl children</i>) | 0.30 (0.39) | -0.53* (0.22) | -0.35 (0.24) | -0.41* (0.19) |
| Cohabitation (<i>base: not cohabiting</i>) | -0.05 (0.24) | 0.25 (0.16) | 0.35* (0.22) | 0.39* (0.21) |
| Trincomalee (<i>base :Ampara</i>) | -0.41 (0.23) | -0.23 (0.13) | -0.04 (0.12) | 0.02 (0.13) |
| Batticaloa (<i>base :Ampara</i>) | -0.59 (0.31) | -0.58*** (0.15) | -0.26* (0.13) | -0.18 (0.11) |
| Under Military control (<i>base: under LTTE control or gray area</i>) | 0.47** (0.21) | 0.30** (0.11) | 0.14 (0.11) | 0.14 (0.11) |
| Household unemployment (<i>Base: employed</i>) | -0.58 (0.37) | 0.00 (0.15) | 0.13 (0.13) | 0.03 (0.13) |
| Access to satisfactory public goods and services index- (<i>log</i>) | 0.39** (0.12) | 0.16** (0.05) | 0.10* (0.05) | 0.07 (0.04) |
| Constant | 5.62*** (2.15) | 5.38*** (0.89) | 3.82*** (0.79) | 3.89*** (0.70) |
| Number | 195 | 195 | 195 | 195 |
| R-squared | 0.21 | 0.30 | 0.25 | 0.22 |
| Adj R-squared | 0.16 | 0.26 | 0.20 | 0.18 |
| Root MSE | 0.5 | 0.7 | 0.6 | 0.5 |

Note: a. Standard errors in parentheses, b. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 Male-headed households -RIF regression results

| | RIF 20 | RIF 40 | RIF 60 | RIF 80 |
|---|-------------------|--------------------|-------------------|-----------------|
| Muslim (<i>base: Sinhala</i>) | -0.57** (0.16) | -0.34*** (0.11) | -0.23** (0.08) | -0.12 (0.08) |
| Tamil (<i>base: Sinhala</i>) | -0.48** (0.15) | -0.25* (0.11) | -0.20* (0.08) | -0.08 (0.08) |
| Household head's age (<i>log</i>) | -0.49 (0.30) | -0.29 (0.15) | -0.10 (0.11) | -0.13 (0.09) |
| More than 2 boy children (age<18 years) (<i>base: less than 2 or 2 boy children</i>) | 0.36* (0.17) | -0.06 (0.20) | -0.05 (0.15) | -0.07 (0.14) |
| More than 2 girl children (age<18 years) (<i>base: less than 2 or 2 girl children</i>) | -0.65 | -0.02 | -0.03 | 0.07 |

| | | | | |
|---|---------|---------|---------|--------|
| | (0.38) | (0.16) | (0.11) | (0.12) |
| Cohabitation (<i>base: not cohabiting</i>) | -0.58* | 0.04 | 0.24** | 0.15** |
| | (0.25) | (0.27) | (0.09) | (0.06) |
| Trincomalee (<i>base :Ampara</i>) | -0.29* | -0.20* | -0.10 | 0.00 |
| | (0.15) | (0.11) | (0.08) | (0.08) |
| Batticaloa (<i>base :Ampara</i>) | -0.18 | -0.12 | -0.08 | -0.12 |
| | (0.20) | (0.11) | (0.08) | (0.07) |
| Under Military control (<i>base: Under LTTE control or gray area</i>) | 0.18 | 0.18* | 0.08 | 0.06 |
| Trincomalee | (0.13) | (0.09) | (0.06) | (0.06) |
| Household unemployment (<i>Base: employed</i>) | -0.14 | -0.08 | -0.09 | -0.11* |
| | (0.22) | (0.12) | (0.07) | (0.06) |
| Access to satisfactory public goods and services index- (<i>log</i>) | 0.10 | 0.02 | 0.02 | 0.03 |
| | (0.07) | (0.04) | (0.03) | (0.03) |
| Constant | 6.24*** | 5.25*** | 4.46*** | 4.64** |
| | (1.25) | (0.64) | (0.42) | (0.36) |
| Number | 156 | 156 | 156 | 156 |
| R-squared | 0.20 | 0.19 | 0.15 | 0.12 |
| Adj R-squared | 0.13 | 0.12 | 0.08 | 0.05 |
| Root MSE | 0.8 | 0.5 | 0.3 | 0.3 |

Note: a. Standard errors in parentheses, b. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$