Is Women's Ownership of Assets instrumental in reducing Child Stunting in India?

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Introduction and Need for the Study

- Improving women's control over assets can augment women's economic security and bargaining power, which in turn may have powerful consequences for the health and well-being of their children.
- Although improvements in household assets can benefit all members, resources concentrated in the hands of women can contribute to higher spending on children's health and nutrition compared to resources concentrated in the hands of men (Lundberg & Pollak, 1993).
- Several influential studies have shown that additional income controlled by mothers leads to greater household expenditures on inputs into child well-being including food, education, and health services (McElroy, 1990; Haddad et al, 1997; Thomas, 1997; Quisumbing & Maluccio, 2003; Deere & Doss, 2006; Karnataka & Swaminathan, 2012; Kumar & Quisumbing, 2012; Kaffle & Jolliffe, 2015).

Objectives

- To understand women's ownership of assets across India and to assess the factors affecting women's ownership of assets
- To analyze the Gender Asset Gap across Indian states and to calculate the Asset based Gender Development Index.
- To analyze the relationship between women's ownership of assets and child stunting in India.

Data and Methods

- The study uses data from the fourth round of the National Family Health Survey (NFHS-4) conducted in 2015-16.
- Descriptive statistics and bivariate analysis have been done to show the levels of asset ownership by females across different states in India
- Logistic regressions were performed using STATA 14. For this, a dichotomous variable for child stunting(0 indicates not stunted and 1 indicates stunted) was created.
- Gender Asset Gap is calculated as the percentage of adult men and women who are asset owners in the population of all adult women. The difference between the male and female incidence of assets is referred to as the Gender Asset Gap.

Findings

Table 1: Odds Ratio for Asset Ownership by Background by Females: Ordered Logit Regression

	Currently Married		Never Married	
Background Characteristics Household Characteristics	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Place of Residence (ref. urban)				
Rural	1.168*	(1.131, 1.205)	0.995	(0.944, 1.049)
Age of the Head of Household (ref. 15-39)				
40-59	0.993	(0.967, 1.020)	-	-
60-99	1.016	(0.981, 1.051)	-	-
Sex of the Head of Household(ref. male)				
Female	1.419*	(1.368, 1.472)	-	-
Religion (ref. Hindu)				
Muslim	0.920*	(0.883, 0.959)	0.821*	(0.768, 0.878)
Christian	1.003	(0.942, 1.069)	0.837*	(0.757,0.925)
Sikh	0.861*	(0.786, 0.944)	1.112	(0.952, 1.299)
Others	1.318*	(1.216, 1.430)	1.191*	(1.045, 1.357)
Caste (ref. Scheduled Caste)				
Scheduled Tribe	1.066*	(1.018, 1.115)	1.376*	(1.270, 1.490)
OBC	1.029	(0.993, 1.066)	0.899*	(0.844,0.957)
Others	1.04	(0.998, 1.084)	0.961	(0.895, 1.030994)
Wealth Index (ref. poorest)				
Poorer	1.168*	(1.120, 1.218)	1.266*	(1.171, 1.369)
Middle	1.405*	(1.344, 1.469)	1.397*	(1.289, 1.513)
Richer	1.646*	(1.568, 1.728)	1.539*	(1.414, 1.675)
Richest	2.093*	(1.981, 2.214)	2.043*	(1.861, 2.242)
Regions (ref. North)				
Central	1.02	(0.981, 1.061)	0.911*	(0.853, 0.974)
East	1.766*	(1.690, 1.845)	1.709*	(1.578, 1.850)
North East	1.774*	(1.679, 1.875)	1.620*	(1.479, 1.776)
West	0.645*	(0.614, 0.676)	1.084	(0.995, 1.181)
South	1.639*	(1.566, 1.716)	1.438*	(1.328, 1.557)
Professional/Technical/ Managerial	1.639*	(1.512, 1.777)	1.400*	(1.249, 1.568)
Clerical	1.864*	(1.508, 2.304)	1.680*	(1.249, 2.261)
Sales	1.346*	(1.217, 1.488)	1.576*	(1.314, 1.892)
Agricultural	0.842*	(0.812, 0.873)	0.902*	(0.833, 0.976)
Services/Household and Domestic	1.352*	(1.260, 1.450)	1.601*	(1.392, 1.840)
Manual-skilled & unskilled	0.892*	(0.846, 0.940)	0.927	(0.844, 1.019)
Index of Wife Beating (ref. no)				
Yes	0.967*	(0.942, 0.993)	-	-
Husband's Characteristics				
Education (ref. illiterate)				
Primary	1.04	(0.997, 1.085)	-	-
Secondary	1.440*	(1.393, 1.488)	-	-
Higher	2.103*	(2.006, 2.204)	-	-
Occupation (ref. not working)				
Professional/Technical/ Managerial	1.651*	(1.535, 1.776)	-	-
Clerical	1.406*	(1.283, 1.541)	-	-
Sales	1.317*	(1.231, 1.410)	-	-
Agricultural	0.869*	(0.817, 0.924)	-	-
Services/Household and Domestic	1.436*	(1.340, 1.537)	-	-
Manual-skilled & unskilled	0.872*	(0.819, 0.928)	-	-

*ep<0.01, **ep<0.05
For Currently married, N=87184 and R2= 0.016 For Never Married, N=28176 and R2=0.058 Footnote: The dependent variable asset has5 categories ranging from 0 (owns no assets) to 4(owns all assets)

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Figure 1: Gender Asset Gap, India (2015-16)

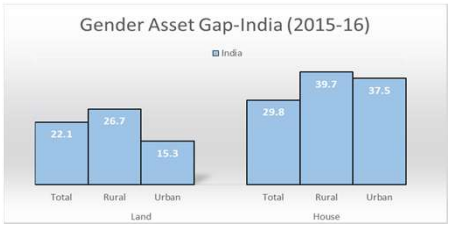

Figure 2: Gender Asset Gap by states (2015-16)

Figure 3: Asset based Gender Development Index (2015-16)

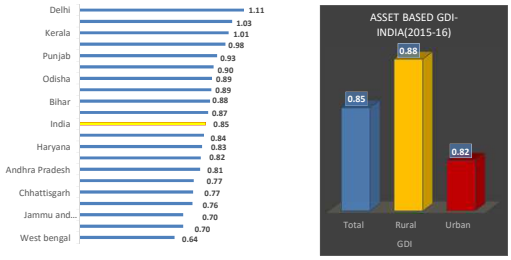

Figure 4: % of stunted children under 6 years across states (NHFS-4)

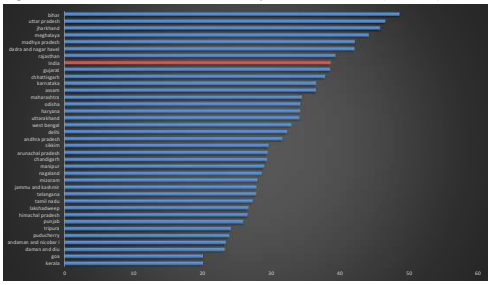

Figure 5: Women's asset ownership vs child stunting

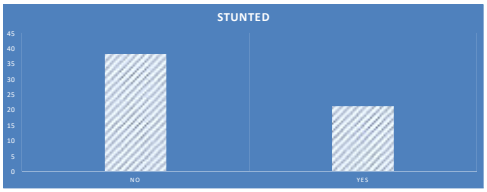

Table 2: Odds Ratio of Child Stunting based on Mothers' Background Characteristics

Mother's Asset Ownership	Odds Ratio	95% Confidence Interval
Basic Asset Index(ref. no assets)		
1	0.925**	(0.868, 0.986)
2	0.904*	(0.851, 0.962)
3	0.955	(0.885, 1.030)
4	0.857*	(0.783, 0.938)
Characteristics Of the Child		
Sex of the Child(ref. boy)		
Girl	0.917*	(0.879, 0.957)
Birth Order	1.03*	(1.015, 1.047)
Mother's Characteristics		
Level of Education(ref. no education)		
Primary	0.921**	(0.859, 0.987)
Secondary	0.740*	(0.696, 0.786)
Higher	0.486*	(0.437, 0.542)
Mother Smokes(ref. no)		
Yes	1.838*	(1.256, 2.690)
Mother's Height(ref. 950-1450)		
1451-1650 cms	0.484*	(0.454, 0.516)
1651-1840 cms	0.218*	(0.171, 0.277)
1842-2052 cms	0.566**	(0.358, 0.892)
Frequency of listening to radio(ref. not at all)		
less than once a week	0.956**	(0.870, 1.050)
at least once a a week	0.962**	(0.765, 0.892)
almost every day	0.879	(0.778, 0.994)
Frequency of watching television(ref. not at all)		
less than once a week	0.881**	(0.811, 0.957)
at least once a week	0.826**	(0.765, 0.892)
almost every day	0.745**	(0.704, 0.788)
Attitude towards wife beating(ref. no)		
Yes	1.041	(1.00, 1.09)
Father's Characteristics		
Father's Educational Level(ref. no education		
Primary	0.949	(0.881, 1.023)
Secondary	0.815*	(0.764, 0.869)
Higher	0.657*	(0.595, 0.724)
Geographic Regions(ref. north)		
Central	1.392*	(1.307, 1.484)
East	1.150*	(1.072, 1.232)
North East	0.857*	(0.792, 0.930)
West	1.286*	(1.177, 1.403)
South	1.042	(0.955, 1.136)

*The notation * is p <0.01, ** is p <0.05*
Sample is children of married mothers (n=40,729).

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Table 3: Results from the quantile regression: Summary of Quantile Regression Estimates for Mother's Asset Ownership Indices

Asset index coefficients for HAZ scores	Quantile				
	0.1	0.25	0.5	0.75	0.9
Asset Ownership	4.25**	4.46**	4.89**	5.86**	9.00*

*The notation ** is p <0.01, * is p <0.05*
Sample is children of married mothers (n=40,729).

Key Findings

- With the increase in educational level, the asset ownership increases for both never married and currently married females and this goes for husband's education as well in case of currently married females.
- The gender asset gap in the case of land ownership is more in rural areas as compared to urban areas. This pattern, however, is not so strictly followed for house ownership.
- The asset based gender development index is greater in rural areas for most of the states.
- Nearly 38% children in India are stunted.
- Bihar, with 48% of stunted children, has the highest prevalence of child stunting in India.
- Kerala, with 20% of stunted children, has the lowest prevalence of child stunting in India.
- Male children are more likely to be stunted than female children.
- Prevalence of stunting is low for children belonging to higher wealth quintile, whose mothers are educated and whose BMI is normal
- Women's asset ownership impacts the long-term health of those who are already relatively healthy.
- At the median, a one unit increase in this asset index increases the HAZ score by 4.9 points compared to 5.9 and 9.0 points at the 75th and 90th quantiles, respectively.

Key Findings

- There are several pathways through which mother's status affects child health but this analysis is restricted to linkages between mother's ownership of assets and the health of their children.
- Child's nutritional status and diseases have an established impact on child stunting but these linkages have been omitted from the study because in any econometric analysis, the presence of a large number of variables might hinder the establishment of direct impact between the predictor and dependent variable. Hence, by controlling for minimum required variables, it has been attempted to establish a direct link between mother's asset ownership and child stunting.
- It is proved that father's asset ownership also has bearings for child nutritional and health status but different impacts that the asset ownerships of both the parents can have on child's health have not been compared.

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