ARE AGED A BURDEN OR AN ASSET?
ASSESSING CONTRIBUTION OF ELDERLY WORKERS TO HOUSEHOLD ECONOMIC STATUS IN INDIA

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The literature on ageing has traditionally viewed the elderly as a burden who has to be taken care of by the young, either directly, or by contributing to the state exchequer through taxes The relatively high work force participation of the aged, however, implies that such elderly workers can also become an asset to the household by supplementing household income with their earnings. The financial contribution of the aged workers not only improves the welfare status of the household, but can even reduce the poverty level. In this paper we estimate the magnitude of financial contribution of elderly workers to their families and explore spatial variations in the economic impact of such financial contributions in India. We also investigate the respective roles of state-level factors (like demographic structure of the population, rates of out migration, unemployment levels and economic growth) and household characteristics (like socio-religious identity, household expenditure levels, household type and size, etc.) in determining the size and impact of the financial contribution of the aged.

The present analysis is mainly based on unit level data collected through an all-India survey on "Employment and Unemployment" undertaken by NSSO in 2011-12 (68^{th} round). NSSO categorises workers into three categories— regular wage and salary earners, casual workers and informal sector workers. Information on earnings for the week preceding the survey is provided only for the first two categories. Based on this information, we have calculated monthly earnings of the elderly for regular wage and salary earners (multiplying weekly earnings by 30/7). In case of casual workers, we first calculated daily earnings (dividing weekly earnings by number of days worked in week preceding the survey) and then

multiplied this by 30 to get monthly earnings. Income of informal sector workers are estimated by deducting total earnings by other members from household expenditure for households with members engaged in the informal sector.[1]

The aggregate monthly earnings of all aged workers in each household is used to estimate the financial contribution of the aged, defined as follows:

$$\text{Gross financial contribution of aged} = \frac{100 * (\text{Monthly earnings of aged workers in household})}{\text{Monthly expenditure of household}}$$

$$\text{Net financial contribution of aged} = \frac{100 * (\text{Monthly earnings of aged workers in household - Expenditure on aged members})}{\text{Monthly expenditure of household}}$$

All-India level estimates of gross and net contribution are given below:

Contribution	Rural	Urban	India
Gross	10.08*	6.97*	8.91*
Net	1.25*	-0.61*	0.55*

*Note: * Denotes significance at 1% level.*

The net contribution was positive and statistically significant for states like Kerala, Tamil Nadu, Uttar Pradesh, Bihar, Orissa, Rajasthan and Tripura—implying that the aged are "assets". Among the major states where the aged make negative contributions (indicating that they are a burden) are Gujarat, Maharashtra, West Bengal, Assam, Himachal Pradesh and Haryana. The spatial variation in mean financial contribution was then graphed for both rural and urban areas to obtain an idea of the geographical distribution and pattern of financial contribution of aged workers.

This is followed by an econometric analysis identifying determinants of magnitude of gross and net contribution of the aged at the household level. Given that the dependent

[1] Sum of earnings of other members exceeded household expenditure in only 0.7 percent cases. In such cases earnings from informal sector workers was assumed to be zero or negligible. On the other hand, it may be argued that we are over estimating earnings from informal sector workers, as household savings are included within earnings from informal sector workers. However, this is unlikely to have occurred on a large scale as households with members working in the informal sector are mostly poor and unlikely to have any substantial savings.

variables assumes a zero value in a large proportion of cases (so that censoring of the data occurs), a Tobit model was used. It was hypothesized that the following variables determine magnitude of contribution: Place of residence, Socio-religious identity, Household type, Household size, Expenditure level (its log value and square of log value), State-level unemployment rates, Log of Per Capita NSDP and State-level out migration rates.

The second focal point of this analysis is on the impact of the financial contribution of elderly workers on household poverty. In India, the Planning Commission calculates the level of poverty using the Head count Ratio (HCR):

$$HCR = q/n$$

where q = Number of poor, n= Total number of persons. An individual is considered to be poor if per capita monthly expenditure is below the state-specific poverty lines.[2] We estimated two HCRs—HCR_1 using the expenditure data given in NSSO (Household expenditure/Household size) and HCR_2 using monthly per capita expenditure of only younger members [(Household expenditure – Earnings of aged)/(Non-aged members)]. The difference between the two HCRs provides an estimate of the extent to which the aged workers are able to pull up households above the poverty line. Results indicate that the presence of the aged does make an important contribution in pulling households above the poverty line in several states—in rural areas of Andhra Pradesh, Jammu & Kashmir, Jharkhand, Kerala, Punjab, Rajasthan, Uttar Pradesh and Uttaranchal. In urban areas the contribution of aged is even more pronounced—except for Chattishgarh and Arunachal Pradesh, where HCR_2 decreases.

Although the HCR is widely used and is easy to understand it suffers some limitations. For instance, it is insensitive to income transfer within the group of poor. Another problem with HCR is that it fails to distinguish between whether the poor are just below or far below the line. This has developed to alternative poverty estimates being suggested of

[2] In 2011, the methodology suggested by the Tendulkar Committee (2010) was used to estimate state specific rural and urban poverty lines.

which the Foster, Greer and Thorbecke (FGT) index is the most popular as it captures both the level and intensity of poverty (Foster et al. 1984). The FGT index is given by:

$$FGT = 1/N \sum(G_i/Z)^{\alpha}$$

where N= Total number of persons, Z = Poverty line, and G_i= Income shortfall of the i^{th} individual, and $\alpha \geq 0$. A value of $\alpha = 2$, yielding the index FGT2, is generally used as the corresponding index satisfies all the axioms of poverty index like continuity, invariance condition, monotonicity, strong monotonicity, transfer axioms, decomposability etc. This paper reports a revised FGT2 index for all states based on the monthly per capita expenditure of the younger members [(Household expenditure – Earnings of aged)/(Non-aged members)]. It is found that the aged contribute to reduce the intensity of poverty in all states in both rural and urban areas; in fact, the contribution of the aged appears to be greater on intensity of poverty, than on incidence.

We further argue that the aged contributes to households by providing non-marketed services, or as unpaid substitutes of market service providers. While NSSO data does not enable us to estimate the value of such services, such contribution are critical in improving household welfare and even household income (by freeing working members from the necessity of undertaking household chores). While this implies that the estimates of this paper are more likely to be conservative figures, our study is still able to show that the aged can be an asset to families in developing countries.