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# **Split Households, Household Capital, and Human Capital: Results from a Panel Analysis of India, 1993-2005.**

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These results are based in part on India Human Development Survey, 2004-05. This survey was jointly organized by researchers at University of Maryland and the National Council of Applied Economic Research. The data collection was funded by grants R01HD041455 and R01HD046166 from the National Institutes of Health to University of Maryland. The panel sample represents a resurvey of households initially conducted in the course of India Human Development Survey 1993-94 conducted by NCAER.

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Results from a Panel Analysis of India, 1993-2005.**

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**ABSTRACT**

Household economics models have generally taken household structure for granted. Consequently, the fluidity of household structures has been under-examined. While the joint household structure is the ideal household type in India, household structures are not static, with many Indian households splitting and forming new households over time. Utilizing newly available panel data on Indian households for 1993-1994 and 2004-2005, this paper analyzes the factors that may influence whether a household stays intact over time or if the household splits into multiple households. Modeling household change as an outcome variable, this paper assesses the effects that the pooling of physical capital within the household has on household change. Additionally, the analysis measures the likelihood of household change as an outcome of human capital among household members.

## **Introduction**

The joint household composed of multiple siblings, their spouses, and the husband's parents has long been held as the traditional family type in India. Though there has been speculation that its structure and underlying value system of familial support are being transformed with modernization, it remains the ideal household structure. Yet while the joint household is posited as the traditional form of organization, many Indians will live in multiple types of households throughout their life. As with the life course of an individual, households have been said to have their own cycle of development with expansion, contraction, replacement, and fission. (Uberoi 2004). It is the latter phenomenon, households splitting, which will be the focus of this paper.

Household economics models have generally taken household structure for granted, and the fluidity of household structures has been under-examined. Using newly available panel data on India collected in 1993-1994 and 2004-2005, this paper proposes to analyze the effects that the pooling of physical capital within the household, and the contributions from human capital among household members, have on the likelihood that a household will split over time.

## **Altruistic and Exchange Models**

A primary function of the joint household structure is the transfer and pooling of resources such as money, assets, labor, and space among the family. The two models most frequently referred to when analyzing household transfers are models based on altruism and models based on exchange. The altruistic model proposed by Becker (1974, 1981) is based on the principle that family members are concerned for the welfare and well being of others in the household. An altruistic head of the household holds sway

over everyone else in the house and can enforce the pooling and distribution of resources. Accordingly, the well-being of weaker members of the household is supplemented by resource transfers from others in the household (Stark 1995; Stark and Falk 1998).

The exchange model, on the other hand, relies on rational choice theory to analyze the motivations for the transfer of resources within the household. Using a cost-benefit approach, individuals make decisions based on the perception of what will maximize their rewards and minimize their costs (Becker 1974). The exchange model is less inherently contradictory with the expectations of self-interest in the market, whereas altruism within the family has been noted to be counter to theories of self-interested actors (Folbre 1988; Berk and Berk 1983). It would seem then that there must be some balancing within the household between altruistic norms toward pooling and transferring resources, and individuals' calculation of costs and rewards in those exchanges.

These tensions can be noted in Sen's (1989) discussion of "cooperative conflict" within households wherein the motivation to contribute and engage in a collusive solution is influenced by the degree to which an individual values their own interests and their own contribution. Household outcomes are shaped by the "coexistence of congruence and conflict of interest" (72).

More generally, sociologists have analyzed family support in the form of informal care, coresidence, and financial transfers. Similar to the exchange model where a calculation of costs and benefits is used to guide behavior, reciprocity suggests that transfers and the pooling of resources is made to repay past debts or with the expectation of receiving future returns (Subaiya 2005).

The altruistic model would suggest that we would be less likely to see a household split when one of the household members is at a disadvantage. However, the exchange model would suggest that in that situation where one member is receiving fewer rewards at a higher cost, the individual would exit from the exchange. Intra-household resource pooling is thus influenced by individual's situation and institutional structures (Desai 1993).

Modeling these processes and household outcomes is difficult to do using only cross-sectional data. Most models take the structure of the household as a given because of data limitations. As such, the dynamics of household structures has been under-analyzed, whereas the household should be understood as a fluid organization that expands and contracts, experiencing fusion and fission. With the recent availability of panel data on Indian households from 1993 to 2005, it is possible now to model changes in household structure as an outcome of the resources and capital available for transfer and exchange within a household. The two research questions underpinning this analysis are, what is the effect of household physical capital on household structure, and what effect does human capital have on the likelihood that a household will split?

**Data: India Panel Data, 1993-2005**

The 1993-1994 Human Development Profile of India (HDPI) conducted by the National Council of Applied Economic Research (NCAER) covered 33,230 households in 1765 villages across 15 states plus the Northeastern states. Approximately 13,000 of these households were targeted for reinterview for the 2004-2005 India Human Development Survey (IHDS) conducted by the University of Maryland and NCAER.

The IHDS includes 41,554 households encompassing all 33 Indian states with the exception of small populations living in the islands of Andaman-Nicobar and Lakshadweep. Conducted between December 2004 and November 2005, the IHDS includes 1504 villages and 970 urban blocks.

To collect the panel data, interviewers contacted households that were surveyed for HDPI in 1993 and selected as part of the panel sample for IHDS. The response rate for these reinterview households was nearly 90%, yielding a panel sample of 11,388 households. Prior to administering the IHDS, interviewers used tracking sheets to collect data regarding the current location of household members who were included in HDPI 1993. The tracking sheet data included, among other things, whether each 1993 household member was in the same house, if the member was in a new location in a split household, or if the household member died in the interim. The unique panel data collected for the 2004-2005 India Human Development Survey (IHDS) makes it possible to analyze change in household structure as an outcome rather than as only a given variable in statistical analysis. In particular, this analysis will measure the likelihood that a single household would become a split household as a consequence of the departure of an adult male member of the 1993 household. Merging the tracking sheet data from the 2005 IHDS with the 1993 HDPI makes such a panel analysis possible.

**Dependent Variable: Change in Household Structure, 1993-2005**

Using the panel data, the dependent variable is a dummy variable for whether or not the household experienced a split between the first survey in 1993 and the second survey in 2005. Constructing this variable at the household level requires coding whether

or not any adult men have left the household for a new location. Whether the new location is in the same village or state will not be a factor in generating the split household variable. For the panel sample, 34 percent of the households had an adult male leave the household for a new location between 1993 and 2005.

### **Independent Variables**

*Household Physical Capital:* To measure the physical resources being pooled in a household and its effects on the likelihood of change in household structure, I will use data from the 1993 HDPI on land ownership and cultivation, household income levels, and household assets. Ownership and cultivation of land play a role in determining the amount of resources pooled within the household as well as the ability of the household to supplement any wage or paid agricultural labor with their own agricultural work.

To measure the amount of capital being pooled by the household in 1993, we use household poverty status. Households were coded in 1993 and being in the lower or upper segment beneath the poverty line, or the lower or upper segment above the poverty line. Additionally, households in HDPI were asked about ownership of a series of assets such as a radio, television, fan, or air cooler among other goods. These will be combined to create an assets index as another measure of household physical capital.

*Household Human Capital:* According to the altruistic model, a household member will normatively contribute to the well-being and welfare of other family members. Two factors that will influence the degree to which this is possible are the education of the household member, and the type of work being done. Though the exchange model suggests that a rational actor will exit from the exchange if he feels that

the costs are outweighing the benefits. Again, if a household member is more educated than others and is contributing more through work than others, he may be inclined to split off from the household. To analyze these effects, I will construct a variable measuring for the educational gap between adult male members of the household, as well as the sector of work participation of the adult male members of the household.

### **Control Variables**

To control for any regional variation in the likelihood of households to split, we include controls for state residence. As the 1993 HDPI canvassed only rural households, no controls are needed for urban or rural residence. Additionally, we will include controls for caste, tribe, and religion. And finally, a control is included for household size as this affects the distribution of any pool of resources.

### **Preliminary Descriptive Statistics:**

Of the 11,388 household reinterviewed in 2005 for IHDS, 34.2 percent of the households had an adult male leave the household for a new location since the initial interview in 1993. The average household size in 1993 for households that did not experience a split was 5.3, whereas households that experienced a split had an average size of 7.5 in 1993. Households that experienced a split by the 2005 reinterview were more likely to have cultivated land in 1993 than those households that did not. Households that did and did not experience a split over the time span have similar distributions in relation to the poverty line in 1993.

The mean 1993 age for males who left the household was 22.1, giving them a mean age of approximately 33 in 2005. Among the adult males who left the household,

28.1 percent had less than a primary education as their highest level of education. Another 11.7 percent matriculated, and 8.8 percent had at least a higher secondary education, post-secondary, or professional education. As regards their primary occupation in 1993, 21 percent of the males who left the household by 2005 were involved in cultivation. Roughly 7 percent were involved in non-agricultural wage labor, and another 9 percent were engaged in salaried employment in 1993.

### **Proposed Modeling**

A logistic regression will be employed in the analysis of household change between the 1993 HDPI survey and the 2005 IHDS. Models will be run separately for the household physical capital variables and for the household human capital variables. And then a full model will be run with both sets as well as the controls in order to assess the degree to which the effects of either set of variables is moderated by the presence of the other.

### **Expected Contributions of this Analysis**

One of the most fundamental values to be added by the proposed analysis is the exploration of previously unavailable panel data covering over 11,000 Indian households between 1993 and 2005. More substantively, by modeling household change as an outcome, we will be more attuned to the dynamic nature of household structures. And this will allow for testing some of the ideas regarding the altruistic forces that hold a household together as well as interfamilial exchanges that may either hold together the household or push the household to split apart. This will move beyond models that treat

household structures as static or only as predictors in modeling other household economic outcomes.

Once we have a deeper understanding of household structure as a fluid organizational structure for the transfer of resources within the household, then we can in future studies begin to consider further directions such as what are the consequences of households splitting for the economic status of the split household and the origin household, as well as how household change translates into changes in well-being for the household members.

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