



Land Live: Land ownership in Rural India and Intra Household Exchanges

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ABSTRACT

The incidence of parent-child co-residence in India is among the highest in the world. This paper examines the role of intra-household exchanges and potential bequests in creating incentives for adult children to provide money, time and effort in caring for their parents. Using data from the India Human Development Survey (IHDS), this paper examines the role of land ownership in shaping intra-household relations. The results presented in this paper highlight two observations: (1) Land ownership is strongly associated with increased power and prestige of the older members of the household and is reflected in their residence patterns, access to household resources as well as participation and control over major family decisions, and; (2) These effects vary by gender with older women from land owning families more likely to be living in extended households, but with relatively smaller gains in terms of power and prestige within the household.

Keywords: India, Aging, Family, Asia, Co-Residence, Land Ownership.

INTRODUCTION

In spite of a rich tradition of literature on the importance of intergenerational caregiving in Asia and its consequences for individual well-being (Chen and Short 2008; Gupta and Pillai 2012; Samanta, Chen, and Vanneman 2015; Chen and Silverstein 2000; Raymo et al. 2015), we still do not know very much about why intergenerational co-residence survives in an era where global forces are bringing about vast social changes, including fertility decline and greater life expectancy. With fewer children available to care for parents who live longer, why have intergenerational ties not weakened (Croll 2006)? Theories of family change present two competing visions of family dynamics through which intergenerational transfers are presumed to operate (Stark 1995; Therborn 2004; Bennett 2013; Himmelweit et al. 2013; Rosenzweig and Wolpin 1993).

In one scenario, altruism, filial piety and love, aided by social pressure, may induce adult children to care for their parents. In this case, parents with higher needs may receive more care. In another scenario, financial exchanges may provide an important incentive for children to care for their parents. In this latter case, parents who have the most to give tend to receive care. Empirical research in this area remains fragmented with some support for both mechanisms. Literature in Western societies

shows a somewhat greater preponderance of evidence towards exchange while research from non-Western societies, particularly Asia, shows somewhat greater evidence of filial piety and altruism (Chu, Xie, and Yu 2011; Lillard and Willis 1997; Ruggles 2011; Takagi and Silverstein 2012; Schoeni 1997).

In this paper, we seek to fill some of these gaps by focusing on the exchanges between parents and their adult children in India to see if financial motives have any role to play in a society where the norms for filial piety are strong and the society is structured around extended households. We do this by examining the role of land ownership in shaping the well-being of older Indians by using data from the India Human Development Survey II (IHDS-II), a nationally representative household survey of 42,152 households conducted in 2011–12. Specifically, we examine the relationship between ownership of agricultural land and three aspects of inter-generational exchanges for rural residents above the age of 60 years—co-residence, healthcare expenditure, and the decision-making authority within the household.

A focus on agricultural land provides us with an interesting analytical handle. Agricultural land is a scarce and valuable resource that is typically inherited from father to son. There is considerable variation in the laws governing the inheritance of agricultural land across states and religious groups, but until they were amended in 2005, these laws were highly gender-unequal, limiting the inheritance rights of women. The rights of widows were largely limited to the use of land and they could not sell or will away agricultural land. In any case, practicalities and social customs dictate that the patriarch controls the use of the land during his lifetime and to a limited extent, beyond his life through bequest, while his widow retains the nominal use of the land but may not be able to effectively control it (Agarwal 1994). One of the ways in which a patriarch may shape bequest and allocate the shares of various offspring is through the decision of when to effect the partition of ancestral property. Thus, an analysis of the role of agricultural land in familial exchanges separately for men and women allows us to better understand the importance of economic power in shaping intra-household relationships.

We focus on three aspects of well-being: co-residence, medical expenditure and decision-making power within the household. Each reflects a different aspect of intra-family exchange—care,

money and respect, respectively. In a later section, we outline our expectations about the way in which they relate to each other in order to provide a holistic picture of intra-family relationships.

Economic Exchanges and the Family

Studies documenting extensive prevalence of parent child co-residence, particularly in East (Raymo et al. 2015; Zhang, Gu, and Luo 2014) and South Asia (Liebig and Rajan 2003; Rajan and Kumar 2003) often assume that altruism governs filial piety and is supplemented by social pressure on adult children to care for their parents. However, whether these two motives are sufficient in themselves to induce the extent of parent child co-residence and other forms of exchange seen in East and South Asia remains an open question.

Although social pressure may work to induce a certain amount of filial piety from children in behaviors that are visible to the society—such as co-residence—it is not enough to ensure harmonious relationships or respect behind closed doors. A number of studies in diverse Asian societies provide a hint of the factors that may increase the children's willingness to offer support and deference to their parents (Amin 1998; Chen 2009; Dharmalingam 1994; Williams, Mehta, and Lin 1999; Takagi and Silverstein 2012). In a study undertaken in Singapore and Taiwan, Williams, Mehta, and Lin (1999) find that older respondents who owned their own homes were far more likely to be consulted in family decisions than those who lived in homes owned by their children or relatives. A more recent study in China shows that access to property rights over that to a residential flat via employment affects household consumption patterns (Wang 2014). Where men purchased their residence from their employers, consumption patterns were male-oriented, a pattern not found among families where women held property rights. Similarly, in his study based in South India, Dharmalingam (1994) found that the respondents who owned land were far more likely to expect support from their children. Amin (1998) records interesting arrangements whereby sons may live separately from their fathers but may continue to farm family land as sharecroppers or renters, and thereby retain the umbilical cord that ties them to the parental household. Chen (2009) finds that in transitional China, families that have invested in a family business are less likely to break up since business investments tend to be both highly risky and highly rewarding, and the prevalence of larger families may help mitigate the risks. Takagi and

Silverstein (2012) find that in Japan, the children of affluent parents tend to live in parent-headed households while the parents of affluent children tend to live in child-headed households.

These observations suggest the need to examine other possible explanations for high levels of co-residence as well as exchanges of time and money from adult children to parents. In this paper, we examine the role of exchange and potential bequest in shaping filial piety. Following anthropologist Sahlins (1972), Greenhalgh (1985) defines three types of exchanges or reciprocities—balanced, generalized and negative. Balanced exchanges are those that are more or less equal in the short term; negative exchanges are those in which all transactions generally flow in only one direction; and generalized exchanges refer to transactions that “while apparently altruistic, in fact generate a counter obligation. In this case, however, the repayment need not be equivalent in value and may occur at a much later time” (Greenhalgh 1985, p. 269). Many researchers have argued that familial relationships are based on generalized transactions in which wealth often flows between different generations over a long time-span (Becker 1993; Ben-Porath 1980; Caldwell 1978; Greenhalgh 1985; Sahlins 1972).

However, generalized exchange transactions across generations are inherently asymmetrical, particularly if unaccompanied by strong enforcement mechanisms. If the parental generation chooses not to invest in children, the transaction chain is broken before it begins; but if the parental generation fulfills its part of the bargain, what forces the children’s generation to fulfill its end of this implicit bargain? In societies where these long-term implicit contracts survive, they presumably do so because reciprocal obligations are either so ingrained that they do not need reinforcement or because social controls are strong enough to ensure that few children stray from their filial obligations.

This concern about the unenforceability of intergenerational contracts has been reflected in diverse streams of literature. It is most clearly documented in a highly controversial article by Vlassoff and Vlassoff (1980) on rural Maharashtra, India. This article notes that a majority of the men surveyed continued to work well into old age and while most agreed that sons *should* provide support to their fathers, a few respondents looked forward to such support themselves or appeared to have provided it to their own fathers. While this as well as a subsequent article by Carol Vlassoff set off a lively debate on the strength of old age security as a motive for a high degree of fertility (Vlassoff 1991, 1990; Cain

1991), one of the key insights from this work, that is, the lack of an enforcement mechanism for intergenerational transfers and the role of potential bequests in shaping these transfers, has received much less attention.

These competing worldviews—altruism versus exchange—have different implications for which parents are most likely to receive support. If economic exchanges underlie children's respect and responsibility for their parents, parents with the most to give will receive the most respect and care. In contrast, if altruism dominates parent-child exchanges, parents who are the poorest and most in need are most likely to receive support.

Land Ownership and Parent-Child Exchanges

We focus on the ownership of agricultural land as a way of testing the role of exchange in shaping the nature of familial relationships in rural India. Agricultural land is a key asset in agrarian societies and since the land market is poorly developed in India, it is mostly an inherited asset. Thus, one can generally expect that in undivided families, older males will control the land.

In theory, land should be an important carrot to use for obtaining respect and support from children. However, studies of intra-household exchanges show that in recent years, attention to land ownership has waned in favor of other factors such as education and individual incomes (Kochar, 1999). In the Indian context, this is not surprising. Agriculture has remained stagnant or has grown at a sluggish pace while other sectors have experienced rapid growth during the past two decades. Agrarian employment has fallen rapidly (Lanjouw and Murgai, 2007) with a majority of the rural households now relying on non-agricultural incomes as their primary source of support (Desai et al., 2010). Although this move towards non-agricultural work in rural areas would point towards the declining salience of land, a surprisingly large number of Indian families continue to engage in farming. About 69 percent of the rural households draw some income from farming and ancillary activities such as animal care, though own account agriculture only provides 33 percent of the rural incomes (Desai et al. 2010, p. 16). Part of this continued engagement with farming may be due to the precariousness of most non-farm work for rural residents as well as the potential for the long-term appreciation of farmland. Hence,

land ownership has continued to be viewed as a major source of long-term financial investments, even in a rapidly urbanizing state like Tamil Nadu (Dharmalingam, 1994).

LAND OWNERSHIP IN INDIA

One of the most striking developments of the second half of the twentieth century is a decline in the average farm size and an increase in the number of small farms. The National Sample Survey (NSS) records that between 1961 and 2002–03, the proportion of farms that were smaller than 1 hectare in size increased from 39 percent to nearly 70 percent of all farms, while the proportion of medium and large farms of size 4 hectares and above decreased from about 19 percent to 5 percent of all farms (National Sample Survey Organisation, 2006). Some of the early decline in large farms occurred during the land reforms immediately following Independence, but in recent years, much of the change has occurred due to land fragmentation associated with population growth. The IHDS shows that in 2011-12, about 43 per cent of the rural households owned no land, while about 27 percent owned farm plots that were less than half a hectare in size.

Agricultural land in India is not easy to sell or transfer. In spite of considerable attempts at computerizing land records, titles often continue to be held in the names of individuals long dead and land boundaries are not clearly demarcated. Regulations meant to prevent the conversion of agricultural land to a non-agricultural classification imply that under normal circumstances, only someone who has a certificate establishing agriculture as a hereditary occupation for him is able to purchase agricultural land. These complexities turn agricultural land into a relatively long-term investment against uncertainty and inflation but not something that can be easily sold or transferred. The IHDS data document that among the households owning land, 82 percent have acquired this land via an inheritance/gift to the male member of the household and a further 9 percent hold it as an undivided family land. Thus, less than 10 percent of the households have access to disposable land.

Control of land remains concentrated in the hands of the patriarch. The IHDS asked about the household member who is the primary decision maker on farm-related matters, and also asked the names of individuals holding the titles of the land. The results, presented in Table 1, show that a vast majority of the households with a male member aged 60 years and above identify the senior male as the

title holder to the land and in most households, the senior male is also the primary decision-maker regarding farm-related matters. However, the picture changes drastically when the household has women aged 60 years and above but does not have an older male. Here, control seems to pass to a younger male, even in cases where the elder women retain titles to the land. Even more strikingly, in a substantial proportion of the households, in the absence of either older or younger men, the control of land and decisions regarding farming seem to pass into the hands of non-resident family members (for example, a migrant son).

Table 1: Control over Farm Decisions and Land Title

Among Land Owning Households with an Adult Aged 60 Years and Above

	Control Over	
	Land Decisions	Land Title
Households with an Older Male (May Include Older Female)		
Older Male	71	78
Older Female	1	3
Younger Male	20	11
Younger Female	2	3
Missing Information/Non-Resident Family Members	6	5
Households with an Older Female but No Older Male		
Older Male	0	0
Older Female	16	25
Younger Male	69	50
Younger Female	6	6
Missing Information/Non-Resident Family Members	10	18

Source: Authors' calculations from India Human Development Survey, 2011-12.

Typically, land is passed down across generations from father to son. While new legislations also establish daughters' rights to land, they are rarely enforced, particularly since most daughters are

carefully married outside the village, possibly to prevent them from claiming ancestral property (Agarwal 1994). Widows retain a right to their husbands' land but this is not an absolute right, as they must share it with their sons (and now even daughters) under both Hindu and Muslim law. In practice, few older women find it easy to retain control of agricultural land (Cain 1986), as seen from Table 1. Thus, land ownership forms the umbilical cord linking generations, albeit with very different mechanisms for men and women. Whether it translates into increased power for the older generation or not is an empirical question that this paper seeks to address.

The ownership of agricultural land may increase parent–child co-residence in two ways: (1) Aging parents may need help from adult children—mostly sons and their wives—in farm activities; and, (2) Sons may be less likely to separate and seek their fortunes elsewhere since agriculture may provide employment in the absence of viable non-farm work. Thus, the sole focus on intergenerational co-residence is not enough to identify the direction in which power flows. However, viewing co-residence, intra-household resource use and the location of decision-making power within a single framework allows us to get a better handle on whether ownership of land also affects the balance of power within a household.

Measuring Intra-household Exchanges: Care, Money and Respect

Parent–child co-residence in most non-Western societies is higher than in Europe and the United States but Asian societies are unique in terms of the extent to which the older adults continue to reside with their adult children (Bongaarts and Zimmer 2002; Ruggles and Heggeness 2008). This high degree of co-residence seems to be carried forward even in overseas Asian communities and creates an image of societies governed by filial piety and close-knit family ties (Diwan, Lee, and Sen 2011; Gurak and Kritz 2010; Lai 2010; Tolkacheva, Broese van Groenou, and van Tilburg 2010). However, as economic growth has begun to change the social fabric of Asian nations, a few cracks have begun to emerge in this notion of close-knit families, particularly among those with high incomes, suggesting that the hold of the extended family norm may be weaker than has been hitherto believed (Chu, Xie, and Yu 2011; Hermalin and Yang 2004; Sereny 2011).

Much of what we know about parent–child exchanges in Asia comes from studies of residential arrangements in which parent–child co-residence is assumed to be a proxy for transfers of money and time. Regardless of the importance of co-residence as a means of structuring transfers between generations, its directional flow is often difficult to determine. Recent literature has become more nuanced in its approach to intergenerational exchanges. Children may pay for the living expenses of the home in which the seniors reside but at the same time, parents may provide a home and the means of earning a livelihood by integrating children into the family farm or family business (Lee and Xiao 1998; Takagi and Silverstein 2012). Children may provide care to aging and infirm parents but at the same time, grandparents may care for grandchildren, thereby freeing up mothers to enable them to participate in the labor force or carry out household chores (Chen 2005; Zhang, Gu, and Luo 2014). Moreover, co-residence is simply one aspect of the well-being of the older generation. Older individuals may receive both financial and emotional support from children living far away (Agree, Biddlecom, and Valente 2005), and those in extended households may well feel powerless and marginalized as control over family decisions shifts towards the younger generations (Chen 2000; Williams, Mehta, and Lin 1999).

Co-residence as a marker of inter-generational exchange has received considerable attention in the literature (Cameron 2000; DaVanzo and Chan 1994; Frankenberg, Chan, and Ofstedal 2002). However, with some notable exceptions (Agree, Biddlecom, and Valente 2005; Cameron and Cobb-Clark 2008; Kochar 1999; Williams and Domingo 1993; Williams, Mehta, and Lin 1999), other forms of exchange, both monetary and non-monetary, have received less attention, particularly in South Asia where access to appropriate data has been more limited.

In this paper, we try to capture different aspects of familial exchanges by focusing on three outcomes for adults aged 60 years and above: (1) Co-residence with married children; (2) Within household differences in expenditure on healthcare between younger and older generations; and, (3) The role of the seniors in household decision-making. Each of these marks a different dimension of family relationships.

Co-residence involves the willingness to forgo privacy, a promise to care for each other, and financial resource pooling of some type. *A priori* one might assume that co-residence also entails the

transfer of money and respect, but what actually happens within the household deserves closer attention. For example, households differ in their expenditure decisions. At the same income level, some households may be more likely to invest in the health of earning adults while others may be more likely to invest in the health of the older adults. Similarly, in some households, the decision-making power may rest with the older generation while in others, it may rest with the younger generation. We hope to get a better understanding of intra-household power dynamics by examining each of these three outcomes separately.

DATA

We examine the relationship between land ownership and the well-being of the household members aged 60 years and above by using data from the IHDS, conducted first in 2004-05 and then again in 2011-12 (Desai, Vanneman, and National Council of Applied Economic Research 2008; 2015; www.ihds.umd.edu). The IHDS-I is a nationwide survey of 41,554 households located in 32 states and Union Territories spread across 971 urban blocks and 1503 villages. The survey was conducted via face-to-face interviews in 13 languages by locally recruited interviewers. In 2011-12, these households were re-interviewed along with any households that had split from the root household. The re-contact rate was 90 percent in rural areas.

The analyses presented here rely on the data from the 2011-12 wave of the survey but also take into account the endogeneity of residential arrangement by including land ownership in 2004-05 as one of the independent variables in the analysis of co-residence. This is important because land is also divided or given to some household members at the time of the family division, known as *partition* or *batwara* in India, and hence may be as much a function of family structure as its determinant.

The IHDS collected data on household structure, income, consumption and gender relations. As discussed below, it has some unique features that allow us to examine intra-household exchanges. The IHDS data appear to be of high quality and comparable to statistics from the Census and other important surveys such as the National Family Health Survey (NFHS) and the National Sample Survey (NSS) on a variety of indicators such as poverty, literacy, household structure and ownership of assets (Desai et al. 2010).

Since the focus of this paper is on the ownership of agricultural land, it relies on data for 27,579 rural households. Of these, the 11,090 rural households with one or more individuals aged 60 years and above in 2011-12 comprise the sample for these analyses. Appendix Table 1 presents sample means. The analyses have been performed using list-wise deletion since the proportion of cases with missing data on independent variables is rather small with one exception, education. For individuals with missing data on education, the value is set to 0 and a dummy variable indicating missing data on education has been included.

MEASURING INTRA-HOUSEHOLD EXCHANGES

Extended Family Residence

One of the most fundamental ways in which generations transfer love, financial support and care is through living in the same household with each other. Given the strong preference for residential independence in the United States and Europe, co-residence typically takes place when parents are unable to care for themselves and in rare circumstances, when adult children are unable to maintain themselves financially (Ruggles 2009; 2011). However, a similar preference seems absent in India (Caldwell, Reddy, and Caldwell 1984).

The IHDS data show that over 90 percent of the young couples begin their married lives living with the husband's parents, while a further 3 percent live with the wife's parents. As brothers get married, families may separate and some brothers may establish their own homes. However, most often the establishment of separate residences, which is termed as "partition" in India, occurs after the death of the patriarch. Even when brothers separate, the parents usually live with one of the sons. The NFHS, conducted in 1992-93, found that only 2 percent of the older individuals above the age of 60 years lived alone. Another 6 percent lived with the spouse but not children (Rajan and Kumar 2003). The IHDS conducted in 2011-12 shows that nearly 4 percent of the individuals above the age of 60 years in India were living alone while 15 percent were living with their spouses but not children.

Divisions or splits form a turning point in the lifecycle of Indian households. Residential independence for young adults is highly uncommon for unmarried men and women. Most college students live at home while attending college. Young women stay at home until they are married, with

95 percent of the marriages taking place before women reach the age of 25 years (Desai and Andrist 2010). Migration rates for men remain low (Czaika 2012; National Sample Survey Organisation 2010) and as noted above, over 93 percent of the married couples start their marriages living with their parents. Thus, the two dominant events that lead to changes in the household structure are the death of a parent or a split in the household. As multiple brothers get married and have children, the household size grows and at some point, some of the brothers will move out of the parental home or divide up the parental home to set up their own households. These household splits may at times be acrimonious but are often taken as a matter of course, and aging parents typically live with one of the sons or may even split their time between the homes of several sons. Thus, the crucial choice for older Indians is whether or not to live with a married son (or in rare cases, a married daughter). Sometimes these households may also include younger married brothers or nephews. Among the IHDS sample, 60 percent of the older population were found to be living with a married son or daughter; 11 percent were living in a more complex extended household that also contained married brothers, sisters-in-law, nephews and other relatives, while the remainder (29 percent) were living alone, with a spouse or one or more unmarried child.

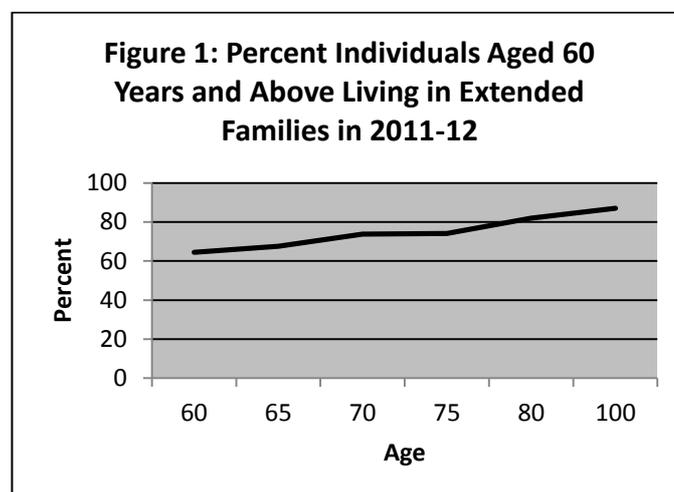


Figure 1 plots the proportion of individuals above the age of 60 years among the IHDS-II survey households who live in an extended family. The term ‘extended family’ is defined as a family in which the head of the household lives with **married** children, grandchildren, or other relatives. None of the IHDS households with the older men and women contained only unrelated individuals. We include married brothers and nephews in extended families because close kin ties in India and shared

inheritance creates relationships between uncles and nephews that are similar to those between fathers and sons. In contrast, nuclear households include the older adults, spouse and unmarried children but do not contain married children or married brothers/nephews. Table 2 provides the prima facie evidence of a greater prevalence of extended families among households that own land.

One of the problems with cross-sectional analysis linking land ownership and co-residence lies in the potential endogeneity of land ownership. Since household splits also imply the division of land, any observed relationship between land ownership and extended households may possibly be due to co-residence leading to land preservation rather than land ownership leading to extended co-residence. In order to deal with this potential endogeneity, we test this relationship by using contemporary land ownership data as well as data on land owned in 2004-05 for the 11,086 households with an individual aged 60 years and above that were surveyed at two points in time. Table 2 shows the composition of households in which older individuals reside in 2011-12.

Table 2: Household Composition for Rural Indian Adults Aged 60 Years and above by Ownership of Agricultural Land

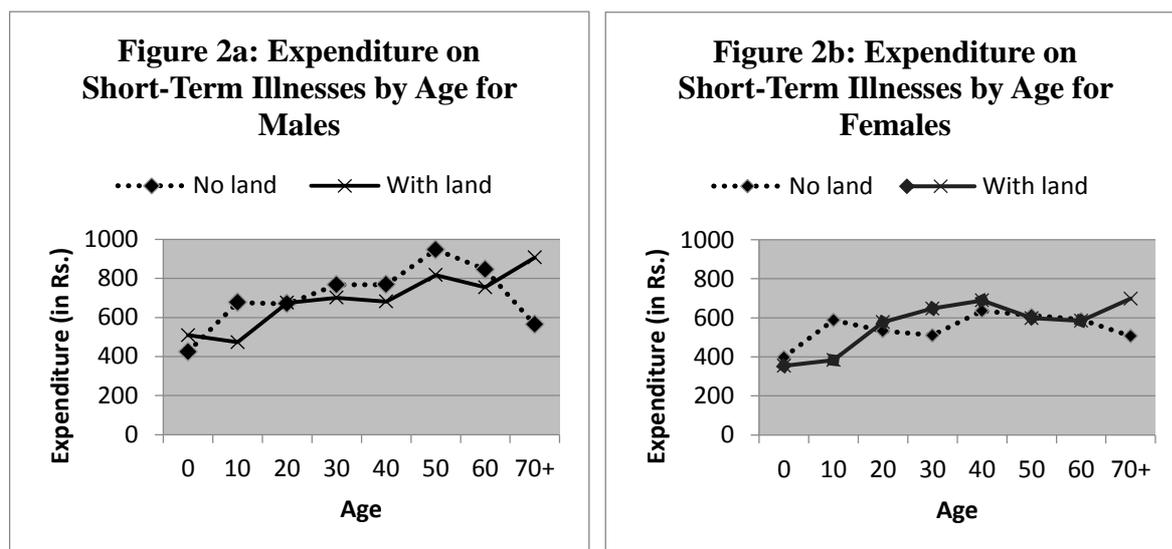
	IHDS 2011-12		
	Without Agricultural Land	With Agricultural Land	Total
Household Composition			
Number of Married Individuals	2.29	2.98	2.75
Number of Married Males	1.11	1.42	1.32
Number of Married Females	1.18	1.56	1.43
Number of Adults	3.01	3.66	3.45
Number of Individuals	4.34	5.65	5.22
Family Composition (%)			
Single Householder	8.54	2.42	4.44
Couples	20.61	11.55	14.54
With Unmarried Children	11.46	9.29	10.00

With Married Children	52.15	63.79	59.95
With Other Members of the Extended Family	7.24	12.96	11.07
Sample Size	4626	10254	14880

Health Care Expenditure

In addition to co-residence, this paper also examines the role of intra-household bargaining in shaping the distribution of household expenditure. In order to understand the intra-household distribution of resources, it would be useful to compare expenditures that are common to all ages. Minor illnesses like fever, cough/cold, and diarrhea afflict all ages, though they are more prevalent at young ages, declining with adulthood and then increasing slightly at older ages. The IHDS asked whether any member of the household suffered from fever, cough/cold and diarrhea in the 30 days preceding the interview. If anyone was afflicted by these three illnesses, information on the source of treatment and expenditure incurred on the fees of the doctor or local healer, tests, medication and transportation for each individual was collected.

The expenditure data depicted in Figures 2a and 2b shows a relatively low expenditure for the young and an upward trend in expenditure by age. These results are in contrast with observations from Pakistan and Cote D'Ivoire (Kochar 1999), where health expenditure is concentrated among adults in the prime working ages. However, when we divide the sample across households with and without land, we see a pattern similar to that reported by Kochar (1999), with health expenditures concentrated in the prime working ages for males in households without land, but not in households that own land; the concomitant differences among women are less sharp but show a similar pattern.



It is important to remember that data on health care expenditure was collected only for individuals who experienced one of the three listed illnesses—fever, cough/cold, and diarrhea—in the 30 days preceding the interview. This group comprises 23 percent of the sample above the age of 60 years and 16 percent of the sample aged 15-59 years. Thus, the analysis for health care expenditure is based on a select sample.

Decision Making Authority

While co-residence and access to household resources shape the material aspect of lives, the social lives of the older population are shaped by their participation in the family's day-to-day affairs. Respect and inclusion constitute the key to a sense of well-being. The extent to which the older adults are able to remain primary decision-makers in households reflects their position in the household (Williams and Domingo 1993; Williams, Mehta, and Lin 1999).

Questions on household decisions have been included in a variety of demographic and health surveys (Agarwala and Lynch 2006; Dharmalingam and Morgan 1996; Kishor 2005; Mason 1998). However, typical surveys ask women about persons in their households who make various decisions, allowing for response categories that include the respondent, husband, respondent and husband, and someone else. IHDS is unique in that when it asked women of reproductive age regarding the person in the household who made various decisions, the respondents could choose from multiple categories including the respondent, husband, senior male, senior female, and someone else. Since the respondent

could opt for multiple responses, she was then asked to identify the primary decision maker for each of the following decisions: whether to purchase an expensive item or not, how many children they should have, what to do when she herself falls sick, whether to buy land or property, and how much money to spend on a social function such as a marriage. Using these five items, we have constructed an index that counts the number of items for which older men and women are the primary decision-makers for each of these domains.

Table 3: Distribution of Household Decision Making by Land Ownership

Primary Decision Maker about...	Senior Female Decides (In households with senior females)	Senior Male Decides (In households with senior males)
<i>Purchasing a Large Item</i>		
With Land	8.1	44.2
Without Land	8.5	33.3
<i>How Many Children to Have</i>		
With Land	3.6	6.1
Without Land	3.8	2.9
<i>What to Do When You fall Sick</i>		
With Land	10.2	18.8
Without Land	8.3	15.3
<i>Whether to Buy Land or Property</i>		
With Land	7.9	54.3
Without Land	10.0	42.3
<i>How Much Money to Spend on Functions Such as Marriage</i>		
With Land	11.2	45.6
Without Land	12.3	34.6
Sample Size	4,164	4,848

The sample consists of older individuals aged 60+ in which an eligible woman aged 15-49 years was also interviewed about household decision making. Households without any eligible woman for the interview are excluded from the analysis.

Table 3 shows the distribution of these items separately for households with senior males and senior females by land ownership. This table shows only calculations for the 7,006 rural households that contain a household member aged above 60 years as well as an eligible female respondent aged 15–49 years. The results show considerable differences in household decisions by land ownership. In households with senior men, land ownership increases the proportion of responses attributing primary decision making to these men, and the incidence of any given decision being taken by senior men in such households is higher than in corresponding households without land. Senior women from land owning households have slightly greater decision making power with regard to some decisions but not all.

METHODOLOGY

We present below the results from multivariate analyses linking agricultural land ownership with three aspects of life-style for the rural Indian population above the age of 60 years—extended family residence, expenditure on short-term illnesses, and decision-making authority. In each analysis, we control for caste and religion, education, household income (where appropriate), and state of residence. In each case, we estimate the models separately for men and women but we also test for significance levels of gender differences in the coefficient for land ownership and report wherever the differences are statistically significant.

The sample for the three models varies as it tries to address different questions. Table 3 describes each model, the sample and outcome variables.

Table 4: Description of Models Estimated

Outcome Variable	Sample	Statistical Model
Extended family residence	7,227 men and 7,649 women aged 60 years and above.	Logistic regression
Log expenditure for three illnesses (fever, cough/cold, diarrhea) in the preceding 30 days	284 men in 135 households and 545 women in 254 households where at least one older and one younger same sex individuals experienced three listed illnesses in the preceding 30 days.	Fixed effects regression

Number of decisions for which senior males and females are primary decision makers	4,056 men and 4,732 women aged 60 years and above who resided in a household where an ever married woman aged 15-49 years completed the household decision making questionnaire.	Ordinal logistic regression
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In general, we control for the characteristics of the seniors (age, sex, marital status, and education) as well as characteristics of the household (maximum education attained by any household member, family size, income and ownership of consumer durables, and household composition, caste/religion) and state of residence. We also control for the physical impairment of individuals (measured through limitation of any activity that comprises the Activities of Daily Living scale in IHDS) since past research shows that co-residence and physical impairment (Sengupta and Agree 2002) are closely linked. However, specific analyses exclude variables that may be seen as being endogenous (for example, income in the co-residence models) and those that do not vary between household members for fixed-effects models. Ownership of land is included in each model.

RESULTS

Extended Family Residence

Table 5 shows results from a logistic regression with living in extended family as the dependent variable. Two sets of analyses are presented separately for men and women; in the first panel, the land ownership variable is taken from the 2004-05 survey while the rest of the variables are from the 2011-12 survey; in the second panel, the land variable is contemporaneous. In both regressions, we also control for the sex and age of the older individuals, their education, caste and religion, and include 21 dummy variables for the state of residence (results not reported).

The results show that land ownership is strongly associated with extended household residence and this relationship is statistically significant at the 0.01 level in both panels. The odds of living in an extended family for males in households with land are 1.68 times the odds for households without land; the comparable odds ratio for females is 1.97. The difference between land ownership and extended family living for males and females is statistically significant. Since family partition may change land ownership, we also examine the link between land ownership in 2004-05 and extended family co-

residence in 2011-12. The results show that the contemporaneous land variable has a greater impact than the lagged variable. This suggests that co-residence may lead to greater land conservation.

Table 5: Odds Ratio of Living in Extended Family for Seniors Aged 60 Years and Above

	Concurrent Land Ownership				Lagged Land Ownership			
	<i>Males Age 60+</i>		<i>Females Age 60+</i>		<i>Males Age 60+</i>		<i>Females Age 60+</i>	
	<i>Odds Ratio</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>SE</i>
Household Owned Any Agricultural Land in 2004					1.37 **	0.136	1.43 **	0.155
Household Owned Any Agricultural Land in 2011	1.68 **	0.168	1.97 **	0.218				
Not Currently Married	2.97 **	0.493	3.63 **	0.572	2.93 **	0.478	3.51 **	0.538
Age	1.02 **	0.008	1.06 **	0.011	1.02 **	0.007	1.06 **	0.011
Educational Level of the Senior	0.81 **	0.014	0.81 **	0.026	0.81 **	0.013	0.81 **	0.026
Missing Education Dummy (Individual)	0.82	0.526	1.24	0.736	0.78	0.509	1.26	0.767
Any Difficulties in Activities of Daily Living	0.75 *	0.094	0.79	0.125	0.75 *	0.092	0.79	0.123
Maximum Adult Education in the Household	1.34 **	0.021	1.31 **	0.031	1.35 **	0.021	1.32 **	0.031
Caste/Religion (Forward Caste Omitted)								
Middle Castes (OBC)	1.09	0.151	1.36	0.255	1.09	0.150	1.36	0.252
Dalit (Scheduled Caste)	1.03	0.177	1.63 **	0.293	1.01	0.171	1.57 **	0.279
Adivasi (Scheduled Tribe)	0.80	0.144	1.48 *	0.293	0.81	0.144	1.52 *	0.299
Muslim	1.46 *	0.283	1.40	0.326	1.41	0.269	1.32	0.305

	Christian, Jain, Buddhist etc.	0.68	0.157	0.67	0.182	0.69	0.161	0.70	0.188
Constant		0.07 **	0.041	0.01 **	0.005	0.09 **	0.053	0.01 **	0.007
Sample Size		7,227		7,649		7,223		7,647	
Chi Square		637.15		717.23		620.97		713.29	
DF		33		33		33		33	

Notes: * $p \leq 0.05$, ** $p \leq 0.01$.

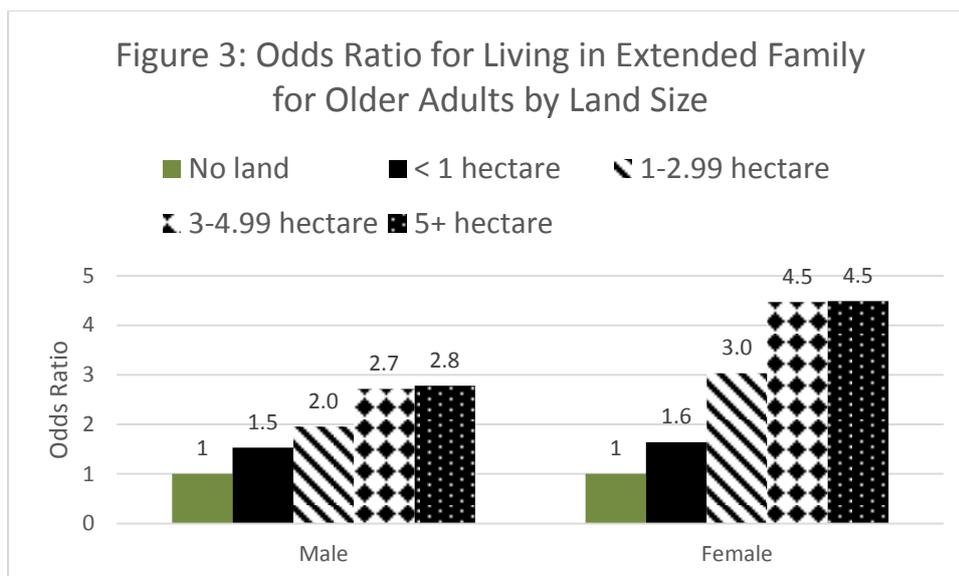
All models include controls for state of residence, results not reported for parsimony.

Sample: Rural residents aged 60 years and above

These analyses do not include three variables used as predictors for the other two analyses since they may be seen as being endogenous to residential decisions. These variables include the employment status of the senior, the household's economic status, and household size. These variables were also included in the analyses of the results not reported here, in order to examine the magnitude of potential bias. The results are comforting in that the magnitude of land ownership coefficients declines only marginally and continues to remain statistically significant at the 0.05 level.

The results presented above also suggest that senior female members in households with land are the most likely to live in extended families. These differences are statistically significant (though the results are not presented here). In general, older women are more likely to co-reside with adult children than older men but this tendency is even greater for households that own land. Indian children face considerable social pressure to care for their parents, and consequently, regardless of land ownership, a large proportion of the senior population resides in extended families. However, land ownership seems to increase this propensity, particularly for women. As families resort to partition on the death of the patriarch, adult children may be far more inclined to take in their mother along with the family farm in an implicit exchange of care for land. It seems likely that short-term reciprocity is an added motive in shaping co-residence for women while long-term exchanges may be more important for older men.

We test the robustness of this relationship by dividing households by the amount of land owned and estimate the regression presented in Table 5 by replacing ownership of any land by a variable that categorizes households by the amount of land owned. The results presented in Figure 3 show that the odds ratio for living in an extended family increases as the amount of land owned increases. However, it is also important to note that with declining sample sizes, the proportion of older individuals living in households with more than 3 hectares of land is extremely small, comprising only about 7 percent of the households.



Expenditure for Minor Illnesses

A second set of analyses, presented in Table 6, has been performed for expenditures incurred on the treatment of minor illnesses such as cough, cold, fever and diarrhea. Given our goal of focusing on intra-household decisions, we compare the expenditure incurred on working age adults with that incurred on older individuals in households wherein both suffer from a minor illness by estimating a household fixed-effects model. Since comparisons are being made within the household, only individual level characteristics such as age, marital status, employment and activity limitation are included in the model. Once again, the models have been estimated separately for men and women.

The results suggest that in households with agricultural land, health care expenditure incurred on senior males is higher than that on working age men, and this difference is large and statistically significant. However, a comparison of senior women with working age women indicates that the benefits of land ownership are smaller and not statistically significant.

Table 6: Household Fixed Effect Models Predicting Log Monthly Expenditure on Treatment of Short-term Illnesses for Adults and Older Members Who Were Sick in the Month before the Interview from Households Where Adults and Older Members Co-reside, 2011-12.

	Male Older Adult Household	Female Older Adult Household

	Co-efficient		SE	Co-efficient		SE
Individual Aged 60+ from Land Owning Household	0.69	**	0.208	0.25		0.197
Individual Aged 60+ from Household with No Agricultural Land	0.26		0.332	-0.04		0.265
Not Currently Married	0.40		0.387	0.36		0.194
Employed	0.25		0.219	0.11		0.182
Completed Years of Schooling	0.07	**	0.027	0.02		0.021
Missing Data on Education				0.70		1.455
Difficulties in ADL	0.11		0.321	-0.02		0.212
Constant	4.41	**	0.299	5.01	**	0.168
Observations	284			545		
Number of Households	135			254		
R-squared						
Within	0.10			0.04		
Between	0.03			0.00		
Overall	0.00			0.01		

Notes: * p <= 0.05, ** p <= 0.01.

Sample: All rural samples where adults and older individuals co-reside and at least one of the adults and one individual aged 60 years and above suffered from short-term illness one month prior to the 2011-12 IHDS survey.

As some observers note, the efficacy of treatment declines with age due to increased resistance (Grossman, 1982) and if required, this re-allocation may well be justified. However, regardless of the justification, the fact that we see a greater increase for households that own land (and mainly in the case of men) bolsters our argument that intra-household exchanges are more likely to be in favor of the older individuals in households with land. Interestingly, the advantages of land

ownership do not seem to accrue to women. The difference between younger women and older women in households with land is much smaller and not statistically significant.

Since the sample size for households in which both older and younger adults of the same sex experience illness is extremely small, in the results not reported here, we test the robustness of these results by estimating ordinary least square regressions with all household members and interacting age, gender and land ownership. In the full sample, we continue to find that older men with land have higher health care expenditure than working age men but this relationship is not significant for women.

Household Decision Making Authority

In addition to tracing the actual resource allocation in favor of the older population in the preceding analysis, we also trace perceptions regarding authority and decision making from the younger generation. Table 7 examines a Senior Decision Making Index, reflecting the number of items for which the younger female respondent claims that the primary decision-making authority lies with a senior male or female. The list of variables included in these indices is shown in Table 3. We analyze these indices by using an ordinal logistic regression with the STATA OLOGIT command, which does not assume equal distance between the index values of 2 and 3 as between 0 and 1.

Since IHDS-II interviewed up to two ever-married women in a household, we have selected the oldest ever married woman between the age of 15 and 49 years where two interviews were held. The sample for senior male decision making includes only households in which both an eligible woman and a male age 60 years and above reside; for senior female decision making, the sample is limited to households with a senior female aged 60 years and above and an eligible female respondent.

The results from the ordinal logistic regression are presented in Table 7. These results show a re-allocation of decision-making power in favor of older men in the households with land, but not in favor of older women. Older men are 1.43 times as likely to be primary decision makers at each level of this index. Once again, this analysis controls for household income as well as for household size, education, marital status and activity limitation for the senior members.

Table 7: Ordinal Logit Models Predicting Decision Making Index for Older Men and Women as Primary Decision Makers

	<i>Males Age 60+</i>		<i>Females Age 60+</i>	
	<i>Odds Ratio</i>	<i>SE</i>	<i>Odds Ratio</i>	<i>SE</i>
Household Owns Any Agricultural Land	1.43 **	0.168	0.78	0.13
Age	0.96 **	0.007	0.98 **	0.01
Widow/Widower	0.77	0.114	0.83	0.18
Educational Level of the Senior Member	1.03 **	0.013	1.03	0.02
Missing Value in Education	1.52	0.732	0.59	0.62
Difficulties in Performing ADL	0.89	0.129	0.75 *	0.09
Maximum Adult Education in the Household	1.00	0.016	1.02	0.01
Caste/Religion (Forward Caste Omitted)				
Middle Castes (OBCs)	0.89	0.105	0.89	0.12
Dalit (Scheduled Castes)	1.00	0.176	1.29	0.26
Adivasi (Scheduled Tribes)	0.90	0.164	0.87	0.20
Muslim	0.93	0.190	0.74	0.18
Other Religions	0.51 *	0.146	0.80	0.26
Log of Household Income	1.08	0.057	1.06	0.07
Household Income Negative or Zero	3.20	2.100	2.25	1.98
Number of Consumer Goods Owned	1.02	0.013	1.03 *	0.02
No. of Persons in the Household	1.06 **	0.018	1.00	0.03
Household Having More Than One Senior Member	1.08	0.122	0.90	0.19
Cut Point 1	-1.34	0.754	0.37	0.95
Cut Point 2	-0.83	0.755	1.16	0.95
Cut Point 3	-0.12	0.762	1.79	0.94
Cut Point 4	1.09	0.764	2.63	0.98
Cut Point 5	2.33	0.778	3.74	1.01
Sample Size	4056		4732	

Chi-Square	310.46	200
DF	38	38

Notes: ** $p < 0.01$, * $p < 0.05$.

All models include controls for state of residence. Results are not shown for parsimony.

The above results suggest that keeping all the other factors constant, households that own land vest greater power in the hands of the older generation than in the hands of the younger generation, but this benefit accrues only to men. It may be noted that since these reports are obtained from women below the age of 50 years, typically the daughter-in-law of the home in which the older individuals reside, they represent something concrete about the way in which household relationships in that family are structured, at least from the perspective of the younger generation.

The gender differences in the coefficient for land ownership may depend on the type of decisions under consideration. Hence, we separately analyze a decision that is traditionally seen to be in the women's domain, that is, what to cook on a daily basis. We anticipated that if land ownership conferred any advantages on senior women, this is the arena in which we should see it. However, once we control for individual and household level factors, it appears that land ownership confers no advantages on either senior males or senior females but seems to remain largely with younger women, who are most likely to be the primary cooks.

DISCUSSION

While the results presented in this paper suggest that financial exchange and potential bequests form an important aspect of parent–child relationships in India, our reliance on household surveys limits the kind of analysis that we are able to undertake. In particular, while we have information about the children that older Indians live with, we know little about the potential set of children that they could live with. Thus, the analysis focuses on the perspective of the older adults rather than that of the children. A holistic picture of aging and inter-generational relations in India requires information about the full set of potential living arrangement options in addition to the choices that have been made (Seltzer et al., 2005). The endogeneity of many of the processes of

interest poses another challenge to our analysis. However, since the IHDS contains panel information for land ownership in Rounds 1 and 2 of the survey, we are able to check that our results are robust to the inclusion of contemporaneous land ownership as well as land ownership in the first round of the survey.

Within these limitations, the results presented in this paper highlight two observations: (1) Land ownership is strongly associated with increased power and prestige of the older household members and is reflected in their residence patterns, access to household resources for consumption as well as participation and control over major family decisions. (2) These effects vary by gender with older women from land owning families more likely to live in extended households, but with relatively smaller gains with respect to power and prestige within the household. Both these observations have important implications for research on inter-generational transfers in India.

While this paper is not unique in observing the role of parental resources in shaping their status and power within the household (Croll 2006), gender differences in the impact of land ownership provide a more robust test of the role of economic resources in inspiring filial piety. These results also suggest that it is not just the ownership of land, but rather the legal and social conditions surrounding actual control of land that play an important role in shaping intra-household bargains. While the patriarch continues to hold the reins of control for agricultural land—both legally and in practice—in his absence, his wife does not have similar control. When her husband is alive, he holds the reins, whereas on his death, the control frequently passes on to her son and consequently, an older woman does not benefit from the family land ownership in the same fashion as an older male does.

As noted more than 25 years ago by Mead Cain (1986), the consequences of reproductive failure, resulting in the lack of sons, are worse for women than for men. Overall women are overall more likely to live with, or adjust to mature sons than men; those owning land are even more likely to do so (Cain, 1986). Although the legal position of widows varies according to the religious laws under which their family property is governed, in practice, for almost all socio-religious groups, the control over agricultural land typically passes from father to the son, with the sons taking on the responsibility

of caring for their widowed mothers along with the land as a form of short-term exchange. However, as the results in this paper highlight, this does not necessarily lead to a position of power and strength for women as it does for men. While older men continue to retain power in the household and are able to exert control over family resources for their healthcare expenditure and in the realm of family decision-making, older women do not seem to operate from a position of strength as the household headship passes on to their sons.

These results also suggest that even in a nation where a vast majority of older individuals live with their adult children and both legal systems and social norms oblige individuals to care for their parents, older individuals who have control over land or other durable property that they can bequeath to their children may be able to parlay this potential bequest into greater care, time and resources from their children. Land is a particularly important resource in rural India since it provides livelihoods for a large section of the rural population. Moreover, with rising land prices, land has become an important investment that represents future security for the family. Although not examined here, the ownership of a residential flat in an urban area may also have similar consequences and may deserve further investigation. Zhang, Gu and Luo (2014) have cited a strong negative association between the home ownership of adult children in China and their co-residence with parents.

A focus on the role of anticipated bequest in shaping inter-generational exchanges has important implications for Indian societies as it undergoes rapid social transformation associated with both economic development as well as demographic transition. As fertility declines and at least some proportion of the parents are left with small families or only daughters, property ownership may help ensure that they will continue to receive support from a smaller pool of descendants. However, the importance of land for the purposes of bequest is likely to decline. Land fragmentation has left most Indian families with relatively small plots of land. Over the coming generations, it is likely to fragment even further.

However, while we see substantial differences in outcomes for the seniors based on whether their household owns land or not, it is also important to note that even among households with no

land, adult children continue to offer a considerable amount of support and respect to their parents. While the predicted probability of co-residence for the land owning seniors is 0.76, it remains as high as 0.60 for seniors in households without any land. This suggests that land as a medium of exchange and bequest plays a role in encouraging co-residence but it starts from an already high base of care and support that all the Indian elderly enjoy.

Moreover, though the incidence of rural to urban migration still remains low (de Haan 2011, National Sample Survey Organisation 2010) it seems likely to increase in the coming decades, thereby reducing the effectiveness of land as an important avenue of wealth transfer. However, given rising real estate prices, a residential home is likely to serve the same function as agricultural land in shaping parent–child relationships. Hence, increasing home ownership may be an important avenue for ensuring that aging parents are able to provide incentives to their adult children to live with and care for them. As of now, only 15 percent of the women claim that home/property titles or rental agreements carry their names (Desai et al., 2010). However, several states are engaging in massive efforts to ensure that new homes are titled in the names of both the husband and wife. This may be important in future to deal with gender inequality by ensuring that older women enjoy access to resources and respect within the household.

Appendix Table 1: Means for the Variables in the Analyses

	Own		
	All	No Land in 2011-12	Land in 2011-12
Dependent Variables			
Proportion Living in an Extended Family Defined As Living With a Married Child or Other Married Family Members	0.71	0.59	0.77
Expenditure on Minor Illnesses for the Elderly (If Sick With Cold, Fever or Diarrhea in the Prior 30 Days)	642.04	521.81	707.28
No. of Items on Which Any Older Family Member Is the Prime Decision Maker (Includes Both Older Males and Females)	1.71	1.39	1.84
No. of Items on Which Older Female Family Members Are the Prime Decision Makers	0.62	0.62	0.62
Independent Variables			
Proportion of Households Owning Land in 2011-12	0.65	0.00	1.00
Proportion of Households Owning Land in 2004-05	0.65	0.23	0.87
Age of the Senior Members	68.51	68.24	68.65
Female	0.51	0.52	0.50
No. of Years of Education	2.08	1.70	2.27
Working in Own Farm, Family Business or for Wages	0.37	0.34	0.39
Caste/Religion			
Forward Castes	0.21	0.13	0.25
Middle Castes (Other Backward Classes)	0.40	0.34	0.42
Scheduled Castes (Dalit)	0.21	0.31	0.17
Scheduled Tribes (Adivasi)	0.08	0.09	0.08
Muslims	0.08	0.11	0.06
Christians, Sikhs, Jains or Those Following Other Religions	0.02	0.02	0.02

Income (Rs. per Year)	94548	73585	105668
No. of Assets Owned (from a List of 23 Consumer Durables Ranging from Cot to Car)	12.2	11.2	12.7
No. of Persons in the Household	5.1	4.3	5.5
No. of Adults over the Age of 21 Years in the Household	3.3	2.9	3.5
No. of Rural Households	27,579	11,106	16,473
No. of Senior Members in the Rural Sample	14880	4,626	10,254
No. of Rural Households with at Least One Senior Member	11,090	3,607	7,483
No. of Rural Households with at Least One Older Individual and an Eligible Woman	7,043	1,980	5,063

Source: Authors' calculations from India Human Development Survey, 2004-05 and 2011-12.

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