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DOES CO-RESIDENCE WITH PARENTS-IN-LAW REDUCE WOMEN'S EMPLOYMENT IN INDIA?

RAJSHRI JAYARAMAN AND BISMA KHAN

ABSTRACT. We examine the effect of co-residence with fathers- and mothers-in-law on married women's employment in India. Instrumental variable fixed effects estimates using two different household panel datasets indicate that co-residence with a father-in-law reduces married women's employment by 11-13%, while co-residence with a mother-in-law has no effect. Difference-in-difference estimates show that married women's employment increases following the death of a co-residing father-in-law, but not mother-in-law. We investigate three classes of explanations for this: income effects, increased domestic responsibilities, and social norms. Our evidence is consistent with gender- and generational norms intersecting to constrain married women's employment when parents-in-law co-reside.

JEL Classification: J16, J22, J12, O12, Z13

Keywords: female employment, family structure, labour supply, parents-in-law

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1. INTRODUCTION

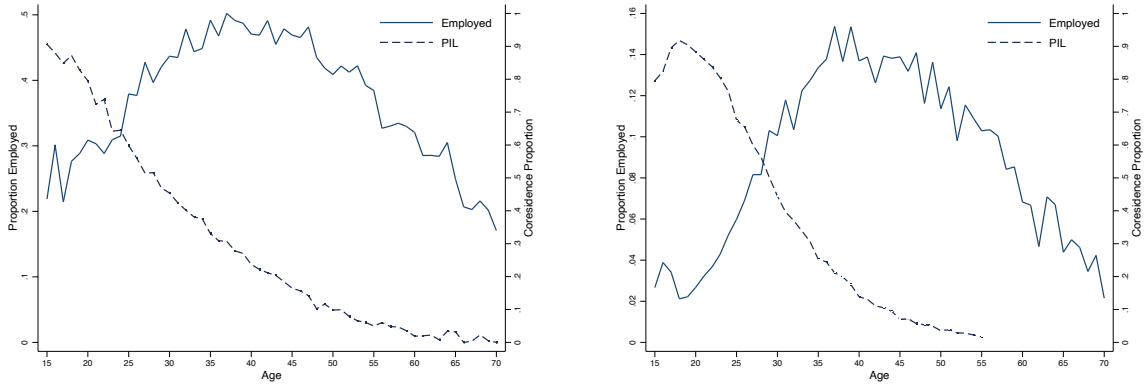
In much of the world, female employment has risen steadily with the rise in prosperity (Esteban Ortiz-Ospina and Roser, 2018), and this has been accompanied with a decline in married women's co-residence with their parents-in-law (Esteve and Liu, 2017). India is an exception. Living standards in the country have improved considerably in the last half century, but India's female employment has remained stubbornly low; see Appendix Figure A1. At the same time, the incidence of co-residence of married women with their parents-in-law is persistently high, even relative to other Asian countries (Breton, 2019). This follows naturally from the Indian tradition of patrilocality, whereby married couples reside with the husband's parents (hereafter "parents-in-law" from the perspective of a married woman).

This paper investigates the relationship between these two stylized facts by asking whether co-residence with fathers- and mothers-in-law reduces employment among married women in India. Figure 1 shows, using two separate household surveys, that these two phenomena are negatively correlated. Employment among married women in India has an inverted-U shape over a woman's life cycle, rising until the ages of 40-45 and declining thereafter.[1] Directly upon marriage, over 70% of married women co-reside with parents-in-law. As employment rises, co-residence with one or more parent-in-law (PIL)—a father-in-law (FIL), a mother-in-law (MIL), or both—declines, usually replaced by nuclear or fraternal households, where the latter refers to co-residence with brothers- and sisters-in-law.[2] Overall, married women who co-reside with PILs have substantially lower employment rates compared to those who reside in nuclear or fraternal households.

There are at least three reasons why the negative relationship in Figure 1 may be causal. First, co-residence allows for potential sharing of income and other household assets of PILs, and this may exert a negative effect on women's labour supply (Rosenzweig, 1988; Strauss and Thomas, 1995; Maurer-Fazio et al., 2011). Second, women in the household carry the lion's share of domestic responsibilities, which include household production, domestic work, eldercare, and childcare. It is conceivable that these responsibilities increase in the presence of a PIL (Lilly et al., 2007). Third, India is characterized by restrictive gender

[1]The pattern bears a striking similarity to that of American women born before the 1950s (Goldin and Mitchell, 2017).

[2]On average, across all women in this age group, approximately 15% of married women co-reside with parents-in-law. Although the precise ratio vary depending on the data source, the high proportions or co-residence are statistical regularity, found in all extant data sources including the two national surveys we use in this paper (see Figure 1), and international surveys including IPUMS and DHS.



(a) IHDS **(b)** CPHS

Figure 1. Women's Employment and Co-Residence with a Parent-in-law *Notes.* This figure depicts the negative correlation between co-residence with PILs and employment using pooled data from the IHDS 2007 and 2012 (panel a) and CPHS 2016-2019 (panel b). The proportion of employed women is shown on the left-hand y-axes, and the proportion residing with one or both PILs (a FIL, a MIL, or both), on the right-hand y-axes. In IHDS, a woman is categorized as employed if she works at least 240 hours in an income generating activity in the past year; in CPHS, a woman is categorized as employed if she reports having been "employed" on the day of, or the day prior to, the survey.

norms, which constrain women's autonomy in general and their labour supply in particular (Jayachandran, 2021, 2015). It is also characterized by norms of filial piety, which accord authority to older household members. Since gender norms tend to be more conservative in older cohorts, gender and generational divides may combine to impose greater norm-based barriers to women's employment, when women co-reside with a PIL.

The gender of co-residing PILs is pertinent in this context. For one, employment rates and asset ownership in India are higher for men than for women. This means that co-residence with a FIL is more likely to have a negative income effect than co-residence with a MIL. For another, as a woman, a MIL is more likely than a FIL to share in domestic responsibilities (Sasaki, 2002). This means that in contrast to a FIL, a MIL's presence may "free" a woman from domestic responsibilities, enabling her to work in the labour market. Finally, given patriarchal norms and the Indian tradition of filial piety, if a FIL is present in the household it is likely that he rather than his wife (the MIL) has decision-making authority, at least outside the kitchen. And since he is older, he is likely to adhere to more conservative gender norms than a husband who, in his father's absence, would likely be the main household decision maker (Sen et al., 2006). Together, these three factors suggest that women's employment may respond differently to the presence of a FIL than that of a MIL in the household.

We account for these gender differences by treating the co-residence with a FIL and co-residence with a MIL as two separate explanatory variables in our analysis. As it turns out, the two have very different effects: we find that co-residence with a FIL has a robust, negative effect on married women's employment, whereas co-residence with a MIL has no significant effect.

Determining the causal effect of co-residence with PILs on women's employment is challenging because co-residence is endogenous. Living with their own parents may be taboo for married women in India (only a handful of women in our data do so). But living with a PIL is a matter of choice, and the reasons for this choice may be correlated with a woman's labour supply. For example, a positive shock to a husband's employment may provide a couple with the financial means to move out of the parental home, while enabling the wife to withdraw from the labour market and stay at home in their new nuclear household. Alternatively, wealthy in-laws may have the financial means to support daughters-in-law who are not employed, leading couples to move in with a husband's parents and women to reduce their labour supply. In general, observing that women who co-reside with PILs are more (or less) likely to be employed says nothing about the causal effect of the former on the latter. Unobserved heterogeneity may lead to upward bias (as in first example) or downward bias (second example) of the true causal effect of co-residence on women's employment, and using individual fixed effects (FE) is inadequate because, as two examples above illustrate, the source of this unobserved heterogeneity may be time-varying.

We address this endogeneity problem in two different ways. First, we use the death of a FIL and the death of a MIL as instruments for co-residence with them. Our instrumental variable fixed effects (IVFE) estimates exploit plausibly exogenous variation in co-residence for a given married woman over time, using two different Indian household panel surveys: the Indian Household and Demographic Surveys (IHDS) and the Consumer Pyramids Household Survey (CPHS). The former comprises a two-round panel, conducted in 2005 and 2012. The latter is conducted on a quadrimester basis (every four months), and we use all available rounds for which employment data are available, prior to the onset of the Covid-19 pandemic, amounting to 12 rounds from 2016 to 2019. Instrument exogeneity rests on the assumption that, conditional on individual FE and time-varying covariates, the death of a FIL between survey rounds is orthogonal to a woman's employment status. This condition is more likely to be satisfied with the high-frequency CPHS data than it is with the 7-year gap between IHDS survey rounds. However, even with the CPHS data, it is hard to rule out the possibility that a PIL's death directly impacts women's employment.

Our second empirical strategy embraces this possibility by exploring the direct effect of a PIL's death on women's employment using difference-in-differences (DiD). We examine how co-residing women's employment evolves following the death of a PIL by estimating a two-way fixed-effects (TWFE) regression using CPHS data. This strategy rests on the plausibly exogenous timing of a PIL's death in a given quadrimester, and a key identifying assumption is that average outcomes in the treated and untreated groups follow parallel trends, where "treatment" in this case refers to the death of a PIL. We have 12 periods of CPHS data, and different women are treated at different points in time. As a large body of recent research (expertly reviewed in Roth et al. (2022)) has pointed out, standard TWFE models are problematic in this case because of potential heterogeneous treatment effects across time or women. We address this issue by employing a doubly robust DiD estimator based on inverse probability of tilting and weighted least squares (Sant'Anna and Zhao, 2020).

As we discuss in more detail in Sections 2 and 3, both of these datasets and empirical strategies have their strengths and weaknesses. On their own neither is immune to criticism, but together they paint a remarkably consistent picture. The IVFE estimates indicate that co-residence with a FIL reduces married women's employment by 11-13%. Co-residence with a MIL has no significant effect on employment. On the flip side, the DiD estimate indicates that employment increases following the death of a FIL, with no significant change in employment following the death of a MIL.

We round the paper off by exploring why co-residence with a PIL may or may not reduce married Indian women's employment, by presenting suggestive evidence pertaining to three main (non-mutually-exclusive) mechanisms. The first potential mechanism is a negative income effect (Chiappori, 1988; Thomas, 1990). Since men in India tend to have ownership over income and assets in the household, this channel would be consistent with two predictions. First, the death of an employed (income-earning) FIL should generate a more positive employment response than that of a FIL who is not employed. (This logic does not readily apply to MILs since very few of them work.) Second, women co-residing with a richer FIL should experience a larger income effect and therefore have a more negative employment response than women co-residing with a poorer FIL. Although we cannot rule out the presence of a negative income effect, tests of these two predictions using available data lead us to conclude that there is no strong evidence in support of this channel.

The second mechanism is changes in domestic responsibilities, which may arise when a PIL is present (World Bank, 2011; Hu and Mu, 2021; Fafchamps and Quisumbing, 2003). These include household production, domestic work, eldercare, and childcare. Individual time use data are unavailable in either the IHDS or CPHS. Therefore, to investigate this mechanism, we turn to a third data source: the 2019 Indian Time Use Survey (TUS) (Li, 2023). The evidence here suggests that co-residence with a FIL is associated with a shift from time spent on paid employment to time spent on domestic activities. While co-residence with a MIL is also associated with an increase in time spent on domestic activities, there is no corresponding difference in time spent on employment. This is consistent with co-residence of a FIL, but not a MIL, detracting from employment. However, the negligible size of the shifts in time use towards domestic activities among co-residing women suggest that increased domestic obligations is unlikely to be the full story.

This takes us to the third mechanism, namely, social norms. Two of them are salient here: gender norms, and norms of filial piety. In the Indian context, the former limits women's agency and tends to be internalized and enforced by families (Jayachandran, 2021; Field et al., 2021; Fletcher et al., 2017). The latter norm vests decision-making authority in older family members, typically co-residing PILs.[3] Gender and generation may therefore intersect to impose more socially conservative norms on daughters-in-law, and this in turn might explain women's lower employment when PILs co-reside. We explore this channel by examining how women's agency varies along three dimensions, depending on whether or not a PIL co-resides with them.

First, we ask who in the family has the most decision-making authority within the household. Second, we examine whether women's mobility outside the home is restricted. Third, we investigate whether her financial autonomy is curtailed. We find that women who co-reside with PILs have less agency than those that don't. In these families, most major household decisions are likely to be made by the FIL rather than their son (the woman's husband), whereas MILs hold sway in the kitchen. Women who co-reside with PILs also have less mobility outside the home and less financial autonomy. This suggests that gender norms combined with filial piety may play a role in explaining our main finding.

[3]According to the ancient Vedic text, the *Rig Veda*, one of the "Three debts" every Hindu owes is the "debt to ancestors", or *Pitra Rina*. In daily practice, this tradition is supposed to elicit deference of younger to older members of a household.

This paper contributes to a large literature on supply-side factors contributing to India's low female employment rate.[4] Recent studies have examined such factors as changes in household members' income (Desai and Joshi, 2019; Mehrotra and Parida, 2017; Sarkar et al., 2019; Klasen and Pieters, 2015); increases in women's education (Afridi et al., 2018); safety concerns; (Siddique, 2022; Chakraborty et al., 2018, 2021; Borker, 2021); work environment (Subramanian, 2019); and the motherhood penalty (Das and Zumbyte, 2017; Kleven et al., 2019; Deshpande and Singh, 2021).

We add to this an examination of the role of family structure on women's employment. In so doing, we contribute to the broader understanding of the role of family structure on employment; see La Ferrara (2010) and Cox and Fafchamps (2007) for reviews in developing country contexts. Numerous studies have examined how husbands or parents may influence women's employment in developing countries; see Mammen and Paxson (2000), Duflo (2012), and Jayachandran (2015) for excellent reviews. In India, two recent papers have documented that rural women in joint families (which include both intergenerational and fraternal families) have lower employment rates than those in nuclear families (Debnath, 2015; Dhanaraj and Mahambare, 2019); this is consistent with our findings. However, an explicit analysis of the role of co-residing PILs on married women's employment has been largely overlooked.[5] This seems like a marked oversight given the preponderance of this intergenerational family structure in the Indian context.

The only paper we are aware of that investigates the role of co-residing PILs on women's employment is Khanna and Pandey (2021). They however focus on MILs, asking how women's employment responds to the death of a MIL (alone); the possibility that a FIL may also be present in the household is not part of their analysis. This almost singular focus on the role co-residing MILs, and neglect of co-residing FILs, in constraining married women's activities is commonplace in the Indian context. Popular culture is replete with caricatures of the tyrannical MIL in extended families, and several academic studies have documented that

[4]This is distinct from demand-side explanations, including the availability of job opportunities (Jensen, 2012), compatibility of work with domestic responsibilities (Sivasankaran, 2014; Chatterjee et al., 2015; Das and Desai, 2003; Chowdhury, 2011; Kapsos et al., 2014; Desai, 2017; Deshpande, 2022), lack of (knowledge of) employment growth for women (Klasen and Pieters, 2015; Afridi et al., 2020)

[5]A handful of studies have examined the effect of intergenerational co-residence on women's employment in countries such as Korea (Chun et al., 2019), China (Maurer-Fazio et al., 2011), Japan (Sasaki, 2002; Mano and Yamamura, 2011; Ogawa and Ermisch, 1996), and Kyrgyzstan (Landmann et al., 2018). Since married women in some of these countries co-reside with their parents, many do not distinguish between co-residence with parents and PILs, and none of them distinguish between FILs and MILs.

co-residing MILs impose constraints on their daughters-in-law's autonomy; see in particular Khalil and Mookerjee (2019) and Anukriti et al. (2020).

Our results support the latter findings, but also suggest that FILs may present an even more important barrier to women's labor supply than just MILs. And our analysis of potential mechanisms suggests that social norms play a role in this. This corroborates findings from the rich prior literature expertly reviewed in Jayachandran (2021), on the role of social norms in constraining women's employment. This paper's additional insight is that a combination of gender-based norms and norms of filial piety—culminating in more conservative restrictions on the agency of women co-residing with PILs—may serve to dampen female employment in India.

The rest of the paper is structured as follows: the next section provides details of our data. Section 3 lays out our empirical strategy, Section 4 discusses the main results and Section 5 provides a discussion on some of the possible mechanisms underlying the main results. Section 6 concludes.

2. Data

We use two key data sources in our main analysis: the Indian Human Development Survey (IHDS) and the Consumer Pyramids Household Survey (CPHS). Both datasets claim to be representative of major Indian states, but they have major differences, including regional coverage, periods of observation (CPHS is more recent), variable definitions (e.g. employment), and urban versus rural coverage (CPHS over-samples urban areas). Each has its strengths and weaknesses, discussed in this section and the next, but using both datasets to investigate our main research question has two main advantages. First, we are able to verify the robustness of our main findings by applying the same empirical strategy (IVFE) to two very different data sources. Second, we are able to use an alternative estimation strategy (DiD), which exploits the high-frequency nature of the CPHS, as a litmus test for our main result. Section 3 explains how we use these data in our empirical strategy.

In terms of potential mechanisms, both of these datasets are used in different ways to explore the presence of negative income effects. To investigate the domestic responsibilities channel, we tap into a third data source: the 2019 Indian Time Use Survey (TUS). Finally, we exploit detailed information from the IHDS's eligible women's questionnaire to explore the social norms channel. We defer a detailed description of TUS 2019 and norms data from the IHDS to Section 5. In this section, we describe the main IHDS and CPHS datasets in detail, and

briefly describe demographic characteristics from the IHDS eligible women panel, and the TUS 2019 cross-section.

2.1. **IHDS.** The IHDS is a household panel dataset, and we use its two most recent waves, from the 2004-5 and 2011-12 (referred to as 2005 and 2012 in what follows). The survey is conducted across thirty-four Indian states and union territories, covering over 40,000 households and 200,000 individuals in each survey year. Our main sample comprises a balanced panel of 66,628 observations, comprising 33,314 married women between the ages of 15 and 70, who are not currently enrolled in school. The panel data structure allows us to examine how employment in the working age population varies with family structure *within* a married woman's life cycle.

	IHDS			CPHS				
	2005	2012	Overall	2016	2017	2018	2019	Overall
Employed	0.40	0.44	0.42	0.12	0.11	0.10	0.09	0.11
Co-resides with FIL	0.24	0.13	0.19	0.15	0.14	0.14	0.14	0.14
Co-resides with MIL	0.33	0.21	0.27	0.20	0.19	0.19	0.19	0.19
Observations	33,314	33,314	66,628	456,853	460,108	500,906	503,976	1,921,843

Table 1. Summary Statistics. *Notes.* This table presents summary statistics on employment and co-residence with fathers- and mothers-in-law for the main sample of married women aged 15-70. Columns 1-3 comprise a balanced panel of women surveyed in 2005 and 2012 in IHDS. Columns 4-8 comprise an unbalanced panel of women observed in at least 2 (of 12 possible) quadrimesters, in the years 2016-2019. "Employed" is a binary variable equal to 1 if a woman is classified as employed and 0 otherwise. IHDS defines a woman as being employed if she worked in income generating activities for at least 240 hours in the previous year, and 0 otherwise. In CPHS, this variable is equal to 1 if the woman worked on the day of, or the day prior to, the survey. Co-residence with FIL (MIL) equals 1 if a woman lived in the same household as her FIL (MIL).

The first three columns of Table 1 furnish summary statistics for the key variables from our main sample. According to the IHDS definition, women are classified as employed if they work for at least 240 hours in an income generating activity in the past year.[6] These activities include work on an own farm, a family business, agricultural labor, nonagricultural labor, and salaried work. According to this definition, the overall employment rate in the main sample is 42%.

[6]This definition is also employed by the other major national-scale surveys in India, and is similar to that used in TUS 2019. The employment numbers may differ from those reported using other surveys such as the National Sample Survey (NSSO), because of how labour force participation is defined. In the NSSO, it is calculated based on the 'usual principal activity' in which the respondent spent the majority of time in the last one year. However, in the IHDS data, it is calculated based on whether the respondent spent more than 240 hours in an income generating activity during the last one year.

The main explanatory variables of interest, described in rows 2 and 3, are co-residence with fathers- and mothers-in-law. Co-residence is captured through the IHDS's detailed household roster, which notes the relationship between different household members. We classify a woman as co-residing with her FIL if she lives in the same household as him (=1); co-residence with a MIL is defined correspondingly. We also define an analogous variable for co-residence with a daughter-in-law (DIL); while this is not the focus of this paper, it does account for potential differences in employment patterns for women co-residing with in-laws from older and younger generations.

Overall, 19% of women co-reside with a FIL and 27% with a MIL. As we detail in Section 3, identification of the effect of co-residence on employment comes from the 20% of women who experienced a change in co-residence status with one or more PILs between survey years. Although 12% of the overall sample co-resides with only a MIL (not a FIL) and 7% are switchers, under 3% co-reside with only a FIL and only 1.5% were switchers; see Appendix Figure A2. This means that we lack the statistical power needed to isolate the effect of of living with only a FIL from from that of living with both PILs; the same holds true of the CPHS. This data limitation informs the empirical model described in Section 3. Additional individual and household covariates included in the empirical analysis are described in Appendix Table A1. These include age, education, husband's education and age, place of residence (urban/rural), caste, religion, the number of children in the household, and number of other adults in the household.

A major strength of the IHDS is its "eligible women" questionnaire, administered to a subset of women covered in the main household sample. The main results in this study rely on the full sample, but detailed questions from the eligible women's questionnaire regarding women's agency permit us to investigate the social norms channel outlined in the introduction for the subset of eligible women who are married. We defer a description of the data on social norms to Section 5.3, where we explore this channel in more detail. Here we simply note that the balanced sample of respondents to the women's questionnaire comprises 21,885 women. Columns 4-6 of Appendix Table A1 furnish summary statistics for this sub-sample, which is systematically younger than the full sample with correspondingly different characteristics. This follows from the inclusion criteria: in 2005, eligible women were those aged 15-49 and were married, divorced or widowed (we restrict our attention to married women); in 2012, these women were re-surveyed.

2.2. **CPHS.** Our second data source is the CPHS, a household panel survey conducted by the Centre for Monitoring the Indian Economy. Representative of all major Indian states, the CPHS covers over 150,000 households and roughly 350,000 working-age women. The main strength of this dataset is its large sample size and high-frequency which, as we will see in the following section, is relevant for our second identification strategy. The survey is conducted each quadrimester: each household is visited three times a year in four-month intervals, between January-April, May-August, and again between September-December. Although the first wave of the survey was initially conducted in January, 2014, employment data was not recorded until January, 2016 so this marks the beginning of our observation period. We also exclude data from 2020-2021 due to the unusual fallout of the Covid-19 pandemic in terms of (among other things) employment. Our period of observation therefore comprises twelve waves—three surveys a year for four years—from January 2016 to December, 2019.

As columns 4-8 of Table 1 indicate, our final sample consists of 1,921,843 observations for which we have data regarding both co-residence with PILs and employment. It comprises 247,549 married women aged 15 to 70, observed over 4 years from January, 2016 to December, 2019. The panel is unbalanced in that not every woman is observed in each of the 12 waves. However, each of these women is observed in at least 2 survey waves.

The CPHS records the employment status of household members (aged 15 or older) on the day of the survey or the day prior to the survey, in one of four categories: (i) employed, (ii) unemployed, willing, and looking for a job, (iii) unemployed, willing but not looking for a job, (iv) unemployed, not willing and not looking for a job. We classify women as being employed if their response falls in the first category.[7] In addition to employment, the CHPS captures 19 possible occupational categories to which respondents may belong. One of them is "homemaker". As a robustness check, we also define a variable called "Not Homemaker" as an alternative measure of employment status. It is equal to 0 if a woman reports her occupation as "Homemaker", "Retired/Aged" or "Student" and equal to one for all other occupations.

The overall CPHS employment rate is 10.6% (column 8 of Table 1). This is considerably lower than that measured in the IHDS (column 3), TUS, or Indian National Sample Surveys, which capture whether a woman worked in an income generating activity, including work

[7]Excluding the second category from our measure underscores our focus on employment rather than female labour force participation (which is the focus of Deshpande and Singh (2021), who use the same data). However, including the second category makes no difference to our results since less than 1% of the sample is in the second category.

in family enterprises for which the woman herself may be paid or unpaid. The CPHS, by contrast, has a more restrictive definition of employment, namely working for pay or for profit. The proportion of women who are employed according to this criteria is consistent with 11% of the sample whose stated occupation is not "homemaker". For our purposes, any potential measurement error in employment is only problematic to the extent that it is correlated with co-residence, and there is no reason to believe this to be the case.

Unlike the IHDS, which records relationships between each member of the household roster, the CPHS household roster only records the relationship of each household member to the head of the household. This means that relationships between household members must be deduced from their relationship with the head. Luckily, this is largely feasible in the case of co-residence with fathers- and mothers-in-law since the latter tend to be either household heads or the spouse of a household head. Hence, we are able to directly verify co-residence with FIL and MIL for over 95% of the full sample, because the woman is coded as being a daughter-in-law. Using information from other household members' relationship with the head of household, we are able to determine co-residence for the full sample with respect to MIL, but are unable to do so for co-residence with FIL for 2.2% observations. Consequently, in our main sample described in Table 1 we drop these observations.

Overall, 14% of the main sample co-resides with a FIL and 19% co-resides with a MIL. Both of these proportions are lower than that in the IHDS, probably because the urban sample, where co-residence is less common, is over twice as large in the CPHS compared to the IHDS (66% versus 31%). As with the IHDS, the small proportion of the sample (2.4%) co-residing with only a FIL compromises our ability to separately identify co-residence with both PILs with co-residence with only a FIL; 7.3% co-resides with only a MIL. In general, as Figure 1 earlier showed, the pattern of co-residence with PILs in the CPHS data over a woman's lifecycle is remarkably similar to that in the IHDS data. Moreover, these patterns are comparable across a variety of different co-residence configurations, including co-residence with both PILs, only a MIL, or only a FIL; see Appendix Figure A3.[8]

[8]Unfortunately, 16% of CPHS observations have missing values for co-residence with a daughter-in-law, and these missing values are non-random: fully 95% of missing values come from women below age 40. Imputation risks measurement error and including daughter-in-laws in our analysis effectively restricts our analysis to women above age 40, where there is little variation in co-residence with a FIL and less than 2% of the sample is in this group (compared to almost 15% in the overall CPHS sample). We therefore exclude co-residence with a daughter-in-law from our analysis and focus on the relationship between employment and intergenerational co-residence with FILs and MILs, as defined in the previous section.

Appendix Table A2 shows summary statistics for the main CPHS sample. Age, education, caste & religion, and household size and composition profiles in these data are similar to those in the IHDS. Spousal characteristics are not included because (as described earlier) limited information available in the household roster means that with multiple adult males in the household, we are unable to clearly identify the spouse. Due to missing values for education and caste we don't include these variables as controls in our empirical analysis in the next section; they are, however, absorbed in the individual FE.

2.3. **TUS.** In Section 5.2, we explore whether changes in time spent on domestic responsibilities associated with co-residence are consistent with our main results. To do this, we require individual time use data, which are not available in either the CPHS or IHDS. We therefore turn to a third data source: the 2019 Indian TUS.[9] TUS 2019 is a nationally representative household survey which records individual time use data based on 24-hour recall. We defer a more detailed description of time use data to Section 5.2.

Our final TUS 2019 sample of married women aged 15-70 comprises 133,155 women from 115,630 households. As with the CPHS, the TUS household roster notes the relationship of each household member to the head of household, and we use this to construct our co-residence variables. As Appendix Figure A4 shows, patterns of co-residence and employment over the life cycle closely resemble those in the IHDS and CPHS. The summary statistics in Appendix Table A12 also show that the proportion of women co-residing with fathers- and mothers-in-law is similar across the three datasets. Women in TUS are classified as employed if paid employment outside the household is listed as their primary activity; according to this definition, the TUS employment rate in our sample is 17.8%.

3. Empirical Strategy

We begin by estimating the following regression equation:

$$y_{it} = \beta_F FIL_{it} + \beta_M MIL_{it} + \delta' X_{it} + \alpha_i + \gamma_t + \varepsilon_{it} \tag{1}$$

where y_{it} is a binary variable capturing whether (=1) or not (=0) married woman i is employed in time period t, corresponding to a survey wave. The variables FIL_{it} and MIL_{it} are indicator variables capturing co-residence of woman i in period t with a FIL and a MIL, respectively. The exclusion comprises nuclear or fraternal households, or other forms of intergenerational co-residence with non-immediate family members (e.g. aunts or uncles of a

[9]We are grateful to Nick Li for sharing this data with us.

husband). The coefficients of interest are β_F and β_M, which capture the relationship between co-residence with a FIL and MIL, respectively, and women's employment. As explained in Section 1, our prior is that $\beta_F < 0$ and $\beta_M \leq 0$.

The vector X_{it} contains controls, including district FE as well as individual and household demographics described in the previous section. In the IHDS analysis, it also includes a dummy variable capturing co-residence with a daughter-in-law. The parameters α_i and γ_t denote individual and time FE, respectively; and ε_{it} is the error term.[10]

Equation (1) is first estimated using OLS and then using individual FE, which accounts for time-invariant unobserved heterogeneity, exploiting variation in co-residence with PILs within a woman's life cycle—between survey waves—to identify β_F and β_M. The main challenge to identification in this context is time varying heterogeneity that is correlated with both co-residence and employment decisions. The direction of the resulting bias of the FE parameter estimates for β are *a priori* ambiguous. For example, the birth of a child may lead a woman to move in with PILs and stay at home, resulting in downward bias. Alternatively, if she enjoys a positive income shock (for example, if her husband finds a better paying job), this may lead her to withdraw from the labour force while making independent living more affordable, resulting in upward bias.

We address this by using two alternative methods: instrumental variables with fixed effects (IVFE) and two-way fixed effects (TWFE), which we explain in turn.[11] Each has its advantages and drawbacks. Alone neither is perfect, but together they provide a coherent picture of whether co-residence with fathers- and mothers-in-law has a negative causal effect on female employment.

3.1. **Instrumental Variables.** Our first identification strategy to deal with the endogeneity of co-residence with a PIL is instrumental variables. Following Debnath (2015) and Dhanaraj and Mahambare (2019), we use the deaths of fathers- and mothers-in-law to instrument

[10]An alternative specification would have been to include co-residence with *only* a FIL, *only* a MIL, and both a FIL and MIL on the right hand side of equation (1). This has two insurmountable problems. First, as seen previously, very few women live with only a FIL. Second, the inclusion of three endogenous regressors warrant (at least) three instruments. As we will see in the next section, two of these instruments—namely, the death of a FIL and the death of a MIL—are strong instruments. The death of both PILs would be a natural third candidate, but very few women fall in this category, especially in the CPHS where (as argued below) instrumental variables make more sense, making this a weak instrument.

[11]An alternative strategy would have been to exploit the birth order of sons; however, relatively few households in the sample had more than one married son residing in the household, and birth histories of most mothers-in-law were not available.

for FIL_{it} and MIL_{it}. But we take this one step further by including individual FE, so variation comes from the death of a FIL over a given woman's life cycle. Since the parents of older women are likely to have already died, identification comes from younger women. We show in robustness checks that all our results go through when we restrict attention to women below the age of 45, but retain the full sample in our main specifications for the sake of completeness.

The key identifying assumption is instrument exogeneity, conditional on individual FE. Conditional exogeneity is arguably more likely to be satisfied in shorter time windows. Hence, it is more likely to hold for the CPHS data where successive waves are conducted in four-month intervals, as opposed to the IHDS whose two survey rounds are separated by seven years. Nevertheless, we estimate Equation 1 using the FE 2SLS estimator, applied to both datasets.

3.2. **Difference-in-differences.** Strict exogeneity of the instrument conditional on individual FEs may be a more credible assumption with high-frequency CPHS data, but may nevertheless fail if the death of a PIL coincides with income shocks that directly impact women's employment. For example, if a son inherits his father's assets then a positive income effect may lead women to withdraw from the labour market. Alternatively, if a patriarch's death compels a husband to take on additional financial responsibilities (e.g. the education and marriage of younger family members), then women may be more likely to work. Absent additional instruments, instrument exogeneity remains a concern.

We therefore use a second empirical strategy, DiD, to directly examine the effect of a co-residing PIL's death on a woman's employment. Our prior is that the demise of a FIL (MIL) increases women's employment (weakly). Concretely, we estimate the following TWFE model using CPHS data:

$$y_{it} = \sum_{l=-K}^{-2} \mu_l D_{it}^l + \sum_{l=0}^{L} \mu_l D_{it}^l + \delta' X_{it} + \alpha_i + \gamma_t + \nu_{it} \tag{2}$$

where i denotes an individual married woman and $t \in \{1, ..., 12\}$ denotes the survey period (quadrimester). The dummy variables D_{it}^l denote $l = \{-2, ..., -K\}$ leads and $l = \{0, ..., L\}$ lags relative to the period directly preceding ($l = -1$) wave in which a women i's PIL died; in separate specifications, this pertains to a FIL and a MIL. The vector of time-varying controls, X_{it} includes age groups, and household composition and size. The parameters μ_l capture employment trends in the K quadrimesters prior to a PIL's death, and the employment

response in the L quadrimesters thereafter. Individual and time FE are denoted by α_i and γ_t, respectively.

Treatment here pertains to the death of a co-residing PIL. It is staggered, in that the PIL may die in any one of the 12 periods of observation. There are two key identifying assumptions in this context. The first is parallel trends, which stipulates that employment for treated women would have evolved in a parallel fashion to the counterfactual where treatment has not occurred. The second is that the death of a PIL was unanticipated. In other words, if a woman has not been treated by period t, their employment does not depend on when exactly they are treated in the future.

In addition, a large body of recent literature has pointed out that in the presence of heterogeneous treatment responses depending on the timing of death, OLS estimates for the μ's cannot be interpreted as dynamic treatment effects (Sun and Abraham, 2021). We account for this by using an approach outlined in Callaway and Sant'Anna (2021) and Sant'Anna and Zhao (2020). This involves restricting our sample to those married women co-residing with a PIL who subsequently died over the period of observation. In other words, we use the "not-yet treated" units as the comparison group—the rationale being that this group is more likely to satisfy the (conditional on covariates) parallel trends assumption (Callaway and Sant'Anna, 2021, Assumption 5). We then estimate equation (2) using Sant'Anna and Zhao (2020)'s doubly robust DiD estimator based on the probability of tilting and weighted least squares, which deals with potential heterogeneity.

4. Does Co-Residence with Parents-in-law Reduce Women's Employment?

This section documents our main results. Section 4.1 presents estimates for equation (1) using OLS, FE, and FE 2SLS. The instrument for co-residence with a FIL and MIL are the death of a FIL and the death of a MIL. We present these estimates separately for the IHDS and CPHS data, and show that the results are remarkably consistent. Section 4.2 presents DiD estimates for (2) using the doubly robust DiD estimator. The main results described in this section are supported by a wide number of robustness checks, which are alluded to below but relegated to the appendix.

4.1. **OLS, FE, and IVFE Estimates.**

4.1.1. *IHDS.* Table 2 presents the OLS, FE and IVFE estimates for equation (1) using the IHDS data. All regressions include survey year FE; in addition, OLS estimates in columns

1 and 2 include district FE. Basic Controls in column 2 include both time-invariant controls (educational attainment of the woman and her husband, and dummies for urban residence, caste, religion), and time-variant controls (co-residence with a daughter-in-law, dummies for 10-year age intervals of the woman and her husband, household size and family composition); time invariant controls are subsumed in individual FE in columns 3-7. Standard errors in these and all future regressions are clustered at the household level.

Dependent Variable: Employed					Fixed Effects 2SLS		
	OLS	OLS	FE	FE	FS FIL	FS MIL	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Co-resides with FIL (β_F)	-0.076***	-0.050***	-0.043***	-0.045***			-0.049***
	(0.007)	(0.006)	(0.010)	(0.011)			(0.017)
Co-resides with MIL (β_M)	0.002	0.017***	-0.002	-0.009			0.019
	(0.006)	(0.006)	(0.009)	(0.011)			(0.019)
FIL died					-0.750***	0.070***	
					(0.006)	(0.010)	
MIL died					0.103***	-0.722***	
					(0.007)	(0.007)	
Observations	66,628	66,628	66,628	24,712	24,712	24,712	24,712
Basic Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.027	0.185	0.023	0.043	0.597	0.565	0.016
No. Individuals			33,314	12,356	12,356	12,356	12,356
First Stage F-Stat					2,948	3,458	
$\beta_F = \beta_M$	0.000	0.000	0.012	0.042			0.002

Table 2. IHDS: Co-residence & Women's Employment *Notes.* This table presents coefficient estimates for β_F, and β_M in equation (1) for the full sample of married women aged 15-70 using IHDS data. The dependent variable is equal to 1 if a woman is employed and 0 otherwise. "Co-resides with FIL" is a binary variable equal to 1 if the respondent co-resides with her FIL and 0 otherwise; "Co-resides with MIL" is a binary variable equal to 1 if the respondent co-resides with her MIL. Each column presents coefficient estimates from a different regression, and survey year FE; columns 1-2 include district FE. Basic controls include educational attainment of the woman and her husband; urban residence, caste, religion; age group of the woman and her husband, household size and family composition. Columns 1-2 present LPM estimates; column 3 presents FE estimates; Column 4 presents the FE estimates for the restricted sample of women who were co-residing with either their FIL or MIL (or both) in 2005. Columns 5 - 7 present first and second stage 2SL2 with FE estimates, where the excluded instruments, "FIL died" equals 1 if the respondent's FIL died between survey years; and "MIL died" is defined correspondingly for MILs. p-values of the t-test for $\beta_F = \beta_M$ are presented in the bottom row. Robust standard errors in parentheses are clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1.

As the first row shows, coefficient estimates for β_F are robustly negative and statistically significant. The OLS estimate in column 1 (without controls) indicates that women co-residing with their FIL have a 7.6 percentage point lower rate of employment; this increases slightly to a 5 percentage point reduction with the inclusion of basic controls. FE estimate in column 3 is of similar magnitude (-4.3 percentage points), suggesting that identification of the parameter estimate comes from within-individual variation, over time. In columns 4-7

the sample is restricted to women who co-resided with one or both of their PILs in 2005, since instrument relevance is most pertinent to this sample.[12] Column 4 re-estimates the FE specification shown in column 3 under this sample restriction to show that doing so does not substantively change the FE estimates for β_F or β_M.

Columns 5 and 6 show first stage estimates for the two endogenous regressors, *FIL* and *MIL*, using their deaths as an instrument. The first stage coefficients on the instruments are sensible. The death of a FIL (MIL) dramatically reduces the likelihood of co-residing with him (her), while the death of a MIL (FIL) slightly increases the likelihood of co-residing with a FIL (MIL). The latter follows from our sample restriction: if you live with both PILs and a MIL (FIL) dies, this increases the likelihood of living with a FIL (MIL) only. A similar pattern is evident for the second endogenous regressor in column 6, co-residence with a MIL. The large F-Stats in columns 5 and 6 are indicative of a strong first stage. The IVFE coefficient estimate for β_F in column 7 indicates that co-residence with a FIL reduces women's by 4.9 percentage points, which amounts to 10.6% reduction in employment (relative to the 46% baseline employment rate for women who don't co-reside with their FIL in this restricted sample.)

The second row, which contains coefficient estimates for β_M from equation (1) paints a different picture for co-residence with MIL: the p-value in the last row shows that across all specifications in the table, we reject the null hypothesis that $\beta_F = \beta_M$. The OLS estimate for β_M in column 1 is close to zero and statistically insignificant; it is positive and statistically significant with the inclusion of controls in column 2, but this estimate is not robust. With the inclusion of FE in column 3, it is again close to zero and statistically insignificant, and this remains the case for the restricted sample in column 4. The IVFE estimate in column 7 is positive, but small and statistically insignificant. In sum, while co-residence with a FIL significantly reduces married women's employment, co-residence with a MIL has no significant effect.

We conduct several robustness checks to support these results. First, as our dependent variable is binary, we also re-estimate equation (1) using logit and conditional logit regressions instead of LPM and FE estimates. The results, presented in Appendix Table A3, entail some sample loss but are qualitatively identical. Second, we investigate whether the results are, as Appendix Figure A3 suggests, coming from the lower half of the age distribution, which is also the relevant sample for our later investigation of social norms in Section 5.3. Appendix

[12]In full sample, the sign and significance of the coefficients are unaltered, but the estimates are implausibly large in absolute value.

Table A4 confirms that this is the case: coefficient estimates are virtually unchanged when we restrict the sample to women aged 45 and below.

Third, in order to ensure that the estimates are not capturing natural variation of employment and co-residence over a woman's life cycle, we examine whether the results are robust to alternative age specifications, including (separately) a quadratic age term, and dummy variables for 2-, 5-, 10-, and 15-year age intervals; Appendix Table A5 confirms that they are. Finally, as mentioned earlier, small samples and weak instruments prevent us from separately identifying a "FIL effect" from a "PIL effect". Appendix Table A6 presents FE estimates for different PIL co-residence configurations, which are variants of equation (1). As expected, co-residence with both PILs absorbs the effect of co-residence with a FIL. However, co-residence with a MIL or only a MIL (i.e. no FIL) is statistically insignificant across all specifications, suggesting that this (joint) PIL effect is really being driven by the presence of a FIL in the household.

These robustness checks lend some credence to the results in Table 2. Nevertheless, as discussed earlier, the instruments may well fail the exclusion restriction due to the 7-year gap between survey rounds—a problem that is somewhat ameliorated with the higher-frequency CPHS data.

4.1.2. *CHPS.* Table 3 presents regression estimates analogous to those in Table 2, but using 12 rounds of CPHS 2016-2019 data, instead of IHDS data. All regressions include quadrimester FE; in addition, OLS estimates in columns 1 and 2 include district FE. Basic Controls include dummy variables for 10 age categories (grouped in 5-year intervals), and measures of household size and composition described earlier.

As the first row shows, coefficient estimates for β_F are robustly negative and statistically significant. The OLS estimate in column 1 (without controls) indicates that employment is 3.3 percentage points lower for women co-residing with their FIL, increasing to minus 1.6 percentage points with the inclusion of basic controls in column 2. This point estimate remains negative and statistically significant with the inclusion of FE in column 3, but is close to zero. This would be consistent with upward bias in the FE estimate due to time-varying heterogeneity. It may also reflect the fact that, given that definition of employment and the frequency of the CPHS survey—unlike the IHDS—a given women may move in and out of employment from one survey round to the next. (Deshpande and Singh, 2021).

Dependent Variable: Employed				Fixed Effects 2SLS		
	OLS	OLS	FE	FS FIL	FS MIL	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
Co-resides with FIL (β_F)	-0.033***	-0.016***	-0.007**			-0.015***
	(0.002)	(0.002)	(0.003)			(0.006)
Co-resides with MIL (β_M)	-0.007***	0.000	0.014***			-0.001
	(0.002)	(0.002)	(0.003)			(0.005)
FIL is Dead				-0.959***	-0.037***	
				(0.003)	(0.005)	
MIL is Dead				-0.012***	-0.911***	
				(0.003)	(0.004)	
Observations	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843	1,903,428
Basic Controls	No	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes
Adj. R-squared	0.088	0.100	0.005	0.274	0.210	0.005
No. Individuals			247,549	247,549	247,549	229,134
First Stage F-Stat				3,568	1,894	
$\beta_F = \beta_M$	0.000	0.000	0.000			0.084

Table 3. CPHS: Co-residence & Women's Employment. *Notes.* This table presents coefficient estimates for β_F and β_M in Equation (1) analogous to those in Table 2 for the full sample of married women aged 15-70 in the 12 waves of CPHS data from 2016-2019. Each column presents coefficient estimates from a different regression, and includes district and survey wave FE. In addition, basic controls include the woman's age category, and family size and composition. Robust standard errors are clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1.

The first stage regressions for the two endogenous regressors have high F-Stats, which strongly confirm instrument relevance. Both instruments have the anticipated sizes and signs: the coefficient on the death of a FIL (MIL) is close to minus one and is highly significant. The IVFE estimate in column 6 indicates that co-residence with a FIL results in a 1.5 percentage point reduction in married women's employment—equivalent to a 13.3% reduction in employment (relative to the 11.3% baseline employment rate for women who do not co-reside with their FIL).

By contrast, the estimate in the second row of Column 6 indicates that co-residence with a MIL has no effect on employment: the OLS and FE estimates for β_M are of varying signs and significance, but the IVFE estimate is close to zero and statistically insignificant. In each of the specifications, we are able to reject the null that $\beta_F = \beta_M$ at at least the 10% level.

These results pass the robustness checks outlined in the previous section, including logit and conditional logit estimations to account for the binary dependent variable (Appendix Table A7); restricting the sample to women aged 45 or less (Appendix Table A8); and alternative age specifications, including dummies for each year of age (Appendix Table A9). In addition, one may be concerned with the somewhat unconventional CPHS definition of

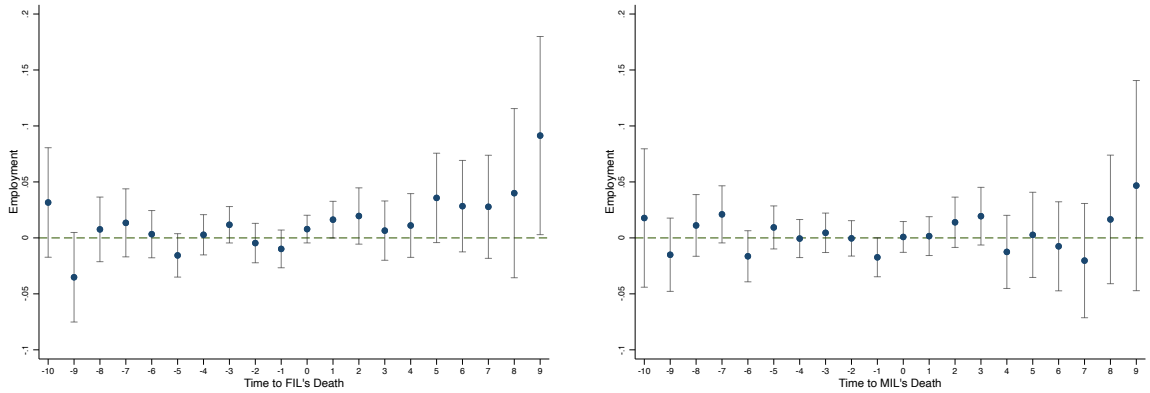
employment. Appendix Table A10 shows that the results are qualitatively and quantitatively similar if one uses "Not Homemaker" as an alternative measure of employment. According to the estimates in column 6 of that table, co-residence with a FIL reduces the probability that a woman is a homemaker by a statistically significant 1.2 percentage points (10.3%), while the IVFE coefficient for β_M is a precisely estimated 0.

Overall, the CPHS estimates in Table 3 are remarkably consistent with those for the IHDS in Table 2. According to the IVFE estimates, co-residence with a FIL reduces employment by 13.3% in the CPHS data and by 10.6% in the IHDS data; and co-residence with a MIL has no significant effect on employment in either dataset. The negative effect of co-residence with a FIL may come from the presence of only a FIL or the presence of a FIL together with a MIL, i.e. a "PIL effect". Unfortunately, data limitations and the problem of weak instruments do not allow us to separately identify a FIL effect from a general PIL effect. What the data do suggest, however, is that co-residence with a FIL in the household reduces women's employment, while the co-residence with a MIL does not.

4.2. **Difference-in-Differences.** Strict exogeneity of the instrument conditional on individual FE may be a more credible assumption with high-frequency CPHS data. But this assumption may nevertheless fail if the death of a PIL coincides with income shocks that directly impact women's employment. Hence, in this section we use DiD to investigate the direct effect of a PIL's death on women's employment. "Treatment" in this context, corresponds to the death of a FIL and (separately) a MIL. Since we found in the previous section that co-residence with a FIL reduces married women's employment, our prior is that a FIL's death increases women's employment. Analogously, building on the results of the previous section, we expect the death of a MIL to have no significant effect on women's employment.

One key assumption in this DiD framework is that the precise timing of death is not anticipated. Appendix Figure A5 provides suggestive evidence that this assumption is plausible. We might expect that in the period immediately preceding the death of a PIL, their health deteriorates, but Appendix Figure A5 indicates that there was no change in the proportion of FIL or MIL reporting that they were healthy in the periods preceding their deaths. A second key assumption is parallel trends, conditional on covariates. Following the argument of Callaway and Sant'Anna (2021) that this assumption is more likely to be satisfied by using "not-yet treated" units as the comparison group, we restrict the sample to women who were co-residing with the respective PIL, who subsequently died over the period of observation.

Figure 2 shows TWFE estimates for the vector of parameters μ in equation (2) with non-yet treated units as the comparison group, using Sant'Anna and Zhao (2020)'s doubly robust DiD estimator to deal with potential heterogeneity in treatment responses. Our focus is on the 2 years (6 quadrimesters) before and 3 years (9 quadrimesters) following the death of a FIL (panel a) and the death of a MIL (panel b).



(a) FIL's Death **(b)** MIL's Death

Figure 2. Women's Employment Response to Death of a PIL: Not Yet Treated Control *Notes.* This figure shows TWFE estimates for μ, with their 95% confidence intervals, in equation (2) for women's employment response to their FIL's death in Panel (a) and MIL's death in panel (b). Units of time in the x-axis are measured in terms of quadrimester. The sample comprises women co-residing with the respective PIL, who then died during the observation period, amounting to 15,520 observations in Panel (a) and 20,191 observations in Panel (b). The control group comprises "not yet treated" women (Callaway and Sant'Anna, 2021). Treatment refers to the death of the PIL. Estimation is implemented using the improved doubly robust DiD estimator based on inverse probability of tilting and weighted least squares (Sant'Anna and Zhao, 2020). All estimates include individual and quadrimester FE, as well as basic controls including age group and measures of family size and composition.

Panel (a) of Figure 2 shows no discernible trend in employment prior to a FIL's death; we are unable to reject the null hypothesis that all pre-treatment parameter estimates are equal to zero (p=0.37). Relative to the not-yet treated comparison group, women's employment increases following the death of a FIL: the average treatment effect on the treated (ATT) is 0.018 (p=0.01).[13] This parameter estimate is a close inverse mirror of the IVFE estimate of the converse—the effect of co-residence with a FIL—from the previous section of -0.015. Panel (a) Appendix Figure A6 shows that the death of a FIL not accompanied in any significant change in the number of other adults in the household (besides the woman and her FIL) aged 50 and above. However, this difference is statistically insignificant. (ATT= -0.02,

[13]Average treatment effects do not necessarily imply a permanent shift into employment; as mentioned earlier, women in the CPHS may move in and out of employment from quadrimester to quadrimester. Large standard errors in the third year of pre- and post-periods in Figure 2 and subsequent TWFE estimates reflect small sample sizes at large time distances from the event of a PIL's death.

p=0.30). This suggests that other changes in family composition following the death of a FIL is unlikely to be what precipitates the increase in women's employment.

Panel (b) of Figure 2 paints a different picture with respect to MILs. Although we are, once again, able to reject the null hypothesis of pre-trends (p=0.82), there is no corresponding increase in women's employment following a MIL's death: the ATT of 0.004 is small and statistically insignificant (p=0.66). Similar to the pattern following the death of FIL, the death of a MIL is not accompanied by any significant change in family composition in terms of other adults in the family aged 50-plus; see panel (b) in Appendix Figure A6 (ATT=-0.026, p=0.19). The null effect of a MIL's death on women's employment, once more, echoes the IVFE estimates from the previous section, which showed that co-residence with a MIL has no significant effect on employment.

These results are qualitatively similar when using "never treated" units as a comparison group; see Appendix Figure A7. Standard errors for treatment effect estimates are considerably larger for this less restrictive sample, which comprises women who were co-residing but whose PIL died during the observation period *and* women who co-resided with the respective PIL for the entire observation period (i.e. the "never treated" comparison group) (Callaway and Sant'Anna, 2021). However, the point estimates in Appendix Figure A7 suggest that, relative to the never treated comparison group, women's employment increases by the middle of the second year after a FIL's death, while it hovers around zero, even slightly decreasing in the second and third years, following a MIL's death.

In sum, both the IVFE and DiD estimates indicate that co-residence with a FIL reduces married women's employment, while co-residence with a MIL has no significant effect on employment. In the next section, we present some suggestive evidence regarding potential mechanisms underlying this finding.

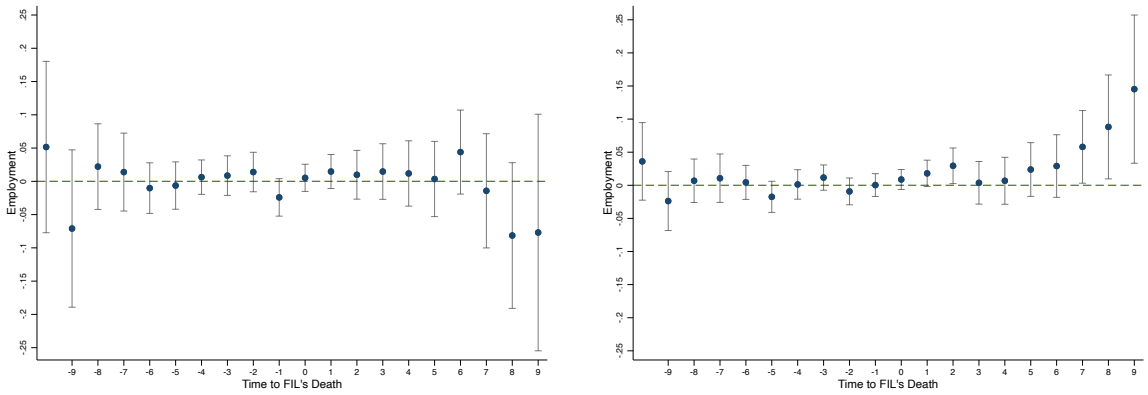
5. Potential Mechanisms

In this section, we explore three candidate mechanisms alluded to in the introduction, which may account for the negative employment effect of co-residence with a FIL and null effect of co-residence with a MIL: (i) a negative income effect, (ii) domestic responsibilities, and (iii) social norms. We emphasize that, due to data limitations, the results in this section are merely suggestive. They do not constitute causal claims, and we do not suggest that channels we explore are comprehensive. Still, the suggestive evidence permits some informed speculation

regarding why we might be seeing main results described in the previous section, while pointing to fruitful avenues of future research.

5.1. **Income Effect.** If co-residence with a PIL gives women access to income or household assets that would otherwise be unavailable to them, then it may exert a negative income effect on women's employment. Since men, rather than women, in India tend to have ownership over income and assets in the household and few MILs in our data are employed, this channel would be consistent with two predictions. First, the death of an employed (income-earning) FIL should generate a more positive employment response than that of a FIL who is not employed, due to a negative earned income effect. Second, women co-residing with a wealthier FIL may be expected to experience a larger income effect and therefore have a more negative employment response than women co-residing with a poorer FIL.

To test the first prediction, we use the same DiD approach applied to CHPS data in Section 4.2. Using the not-yet treated comparison group, we disaggregate the sample described in that section according to whether the FIL was employed for at least one quadrimester in the year prior to his death ("FIL Employed"), or whether he was not employed in the year prior to his death ("FIL Not Employed"); the results are robust to both more and less restrictive classifications of employment (results not shown). Equation 2 is then estimated, as in Figure 2, separately for these two samples.



(a) FIL Employed **(b)** FIL Not Employed

Figure 3. Women's Employment Response to Death of FIL by FIL's Employment Status *Notes.* This figure describes TWFE estimates for μ in equation (2) analogous to those in Figure 2, separately for the sample of women whose FILs were (panel a) and were not (panel b) employed for at least one survey period in the year prior to their death.

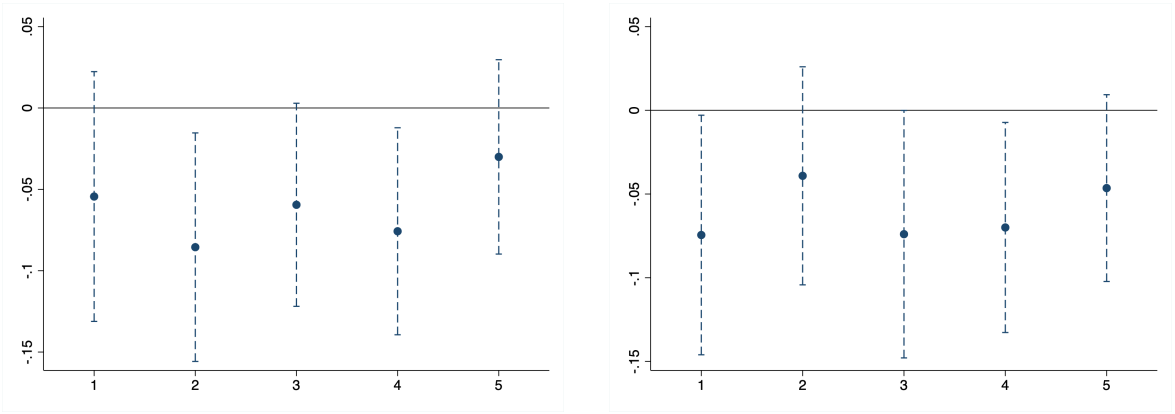
Coefficient estimates for the two samples are shown in Figure 3. If the earned income effect is at play, we would expect a (more) positive employment response for the employed FIL than the not-employed FIL samples. This is not what we see in the figure. Once again, standard errors are large and we reject the null hypothesis of pre-trends in both samples, but Panel (a) shows that women's employment is unchanged following the death of an employed FIL: the ATT is a precisely estimated zero. Panel (b) shows that women's positive employment in the overall sample is driven by the death of a FIL who is *not* employed (ATT=0.023 with a p-value of 0.03). (This analysis is moot for co-residence with a MIL since very few of them are employed.)

We test the second prediction by using IHDS data to estimate the following variant of equation (1), to examine heterogeneous effects by income or asset quintiles:

$$y_{it} = \sum_{q=1}^{5} \beta_F^q FIL_{it} 1_{[q]} + \beta_M MIL_{it} + \delta' X_{it} + \alpha_i + \gamma_t + \varepsilon_{it} \tag{3}$$

where $1_{[q]}$ are binary indicators for the $q = \{1, 2.., 5\}$ income or (alternatively) asset quintiles to which the household of woman i belongs in 2005, where 1 is the lowest quintile and 5 is the highest quintile. Income quintiles are calculated based on total household income, both earned and unearned (pension, remittances, and other benefits received from the government or NGOs). Asset quintiles are based on values for the 2005 IHDS asset measure, which is a simple count variable, summing up how many assets a household owns. It ranges from 0 (no assets) to 30 (all 30 different assets measured). We use this measure based on the IHDS's user guide recommendations; results are unchanged when we construct a weighted asset index based on principal components analysis (results not shown). The remaining variables are defined as in equation (1).

The parameters of interest, β_F^q essentially capture heterogeneous "treatment effects": they disaggregate the FIL co-residence estimate by the income or asset quintile to which the household the woman i belongs in 2005. Since income and assets are measured at the household and not the individual (FIL) level, this is a very imperfect test. Nevertheless, to the extent that rich FILs are more likely to reside in rich households, a negative income effect would be consistent with $\beta_F^j < \beta_F^k$ for $j > k$, i.e. more negative employment effect of co-residence with a FIL for women residing in wealthier households.



(a) Income Quintile **(b)** Asset Quintile

Figure 4. Heterogeneous Response to Co-residence with FIL based on Household Income and Assets. *Notes.* This figure shows IVFE parameter estimates for β_F^q in equation (3) using IHDS data. Quintiles are based on 2005 values of income (panel a) and assets (panel b) of the household in which the woman lives. Income includes both earned and unearned household income. Asset quintiles are based on the IHDS asset index, which is a count variable of different assets owned, ranging from 0 to 30.

z

Figure 4 shows IVFE parameter estimates for β_F^q. Standard errors are large but still, there is no discernible pattern in the coefficient estimates across different income (panel a) or asset (panel b) quintiles. Although this is arguably a weak test of the income effect, the results from these data are not consistent with a negative income effect of co-residence with FILs. Analogous estimates for heterogeneous treatment effects of co-residence with a MIL are similar (results not shown).

Both of these tests are imperfect. In the first test, small sample sizes in the employed FIL group may account for null effects. In the second test, income and asset quintiles are based on 2005 IHDS data, and household wealth may have changed during the intervening 7-years, or women in wealthier households may be systematically different than women in poorer households. Moreover, income and asset measures include all household members, and not just in-laws. This means that we cannot rule out the possibility that a negative income effect plays a role in explaining the negative effect of co-residence with a FIL. What we can say however, is that the evidence based on these tests does not lend strong support to the income effect channel.

5.2. **Domestic Activities.** Co-residence with PILs may also affect women's employment by influencing the time they devote to domestic responsibilities within the household. A woman may have less time for employment if a PIL's presence adds to her domestic responsibilities,

either because she must cater to their domestic needs, or because the PIL enforces gender-based norms requiring women to engage in domestic activities (Hu and Mu, 2021). If, on the other hand, PILs share in domestic responsibilities, then their presence may free the woman to participate in the labor market (Mano and Yamamura, 2011).

To explore whether co-residence is associated with changes in domestic responsibilities, we turn to data from the Indian TUS. In 2019, TUS respondents were asked to report which of 165 possible activities (defined according to the United Nations International Classification of Activities for Time-Use Statistics) they conducted between 4:00 a.m. the previous day and 4:00 a.m. on the day of the interview. Activities within this 24-hour recall window were recorded in 30-minute slots. When multiple activities were recorded within a time slot, the "major activity" was noted. We allocate all the minutes in a slot to this major activity, so that total time use sums to 24 hours.

Our analysis focuses on time spent on (paid) employment and domestic activities in four major areas. The first, "Home production", is the production of goods for households' final use such as tending to domestic animals or home gardens. The second, "Domestic work" comprises unpaid domestic services provided to family members, such as cooking and cleaning. The third, "Eldercare", entails assisting adults in the family. Finally, "Childcare" comprises both passive and active care of children in the family.

Table 4 presents summary statistics for time spent in minutes on employment and domestic activities. It shows that the distribution of time spent on these activities is highly skewed. This may be expected for employment given the low employment rate, but a similar pattern holds for home production, eldercare, and childcare: most women (77%, 99%, and 64% in the respective categories) spend *no* time on these domestic activities. The exception to this pattern is domestic work, where the median is close to the mean and only 3% of the sample reports spending no time on this activity.

On average, women who are classified as employed spend 4.6 hours on employment and 5.5 hours on domestic activities, over three-quarters of which is spent on domestic work. Women who are classified as not employed spend on average 0.5 hours on employment and 7.5 hours on domestic activities, of which 81% is spent on domestic work.[14] See Appendix Table A11.

[14]Women classified as not employed may spend time on paid employment even if "paid employment" is not their "primary activity".

		Percentile		
Time spent on:	Mean	25^{th}	50^{th}	75^{th}
Employment (Paid)	70.51	0.00	0.00	0.00
Domestic activities				
Home Production	30.80	0.00	0.00	0.00
Domestic Work (Unpaid)	346.72	240.00	360.00	450.00
Eldercare	0.93	0.00	0.00	0.00
Childcare	51.59	0.00	0.00	90.00
Domestic Activities (Total)	430.04	300.00	450.00	540.00

Table 4. Time Use Summary Statistics *Notes.* This table shows mean (column 1), 25^{th} percentile (column 2), median (column 3), and 75^{th} percentile time use statistics of married women aged 15-70, from TUS 2019.

Table 5 presents estimates of β_F and β_M in equation (1) using the main sample of married women from TUS 2019. Basic controls described in Appendix Table A12 mirror those used in the IHDS and CPHS data; they include five-year age intervals, education, urban residence, caste, religion, and household size and composition. Column 1 presents marginal effects from a logit regression for employment status. It shows that women co-residing with a FIL are significantly less likely to be employed, while those who co-residence with a MIL are slightly more likely to do so. This mirrors the IHDS logit estimates in the IHDS (see column 2 of Table A3), whose sample frame is similar to TUS.

Columns 2-8 contain marginal effects from Tobit estimates, to account for the left-censored pattern of time use at zero. Column 2 shows that, consistent with column 1, women co-residing with FILs spend 16 fewer minutes on employment, whereas those co-residing with MILs spend 6 more minutes.

Columns 3-6 of Table 5 describe the difference between time spent on four domestic activities based on co-residence with a FIL or a MIL—home production, domestic work, eldercare, and childcare—as well as the total time spent on these domestic activities (column 7). The time use coefficient estimates in row 1 indicate that when a FIL is present, there is a shift in women's time away from paid employment (column 2) to domestic work (column 4)—comprising mostly cooking and cleaning (results not shown). This shift is consistent with the findings in the previous section, that the death of a FIL who is *not* employed prompts a positive employment response, whereas the death of an employed FIL does not. The former is likely to spend more time at home, where his presence may impose extra domestic work demands on his daughter-in-law's time. Women co-residing with FILs spend 4 fewer minutes on childcare (column 6), with no significant difference in time spent on home production (column 3). The coefficients in row 2 indicate that women co-residing with MILs spend 5

		Time (in minutes) Spent On:					
Co-resides with	Employed	Employment	Home Prod.	Dom. Work	Eldercare	Childcare	Dom. Activities (Total)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FIL (β_F)	-0.037***	-16.244***	-0.333	11.895***	-1.052***	-3.863***	6.646***
	(0.005)	(1.751)	(0.883)	(1.743)	(0.179)	(1.003)	(1.995)
MIL (β_M)	0.015***	5.914***	2.203***	-1.049	0.643***	-2.453***	-0.656
	(0.004)	(1.647)	(0.818)	(1.598)	(0.170)	(0.884)	(1.833)
Observations	133,155	133,155	133,155	133,155	133,155	133,155	133,155
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\beta_F = \beta_M$	0.000	0.000	0.058	0.000	0.000	0.033	0.013

Table 5. Employment & Time Use *Notes.* This table shows marginal effects for coefficient estimates for β_F and β_M in equation (1) using the main sample of married women aged 15-70 from the 2019 TUS data, estimated using Logit in column 1 and Tobit in the remaining columns. The dependent variable in column 1 is a binary indicator for whether (=1) or not (=0) a woman's main activity is paid employment. In columns 2-6, it is the time spent on employment, home production, domestic work, eldercare, and childcare, respectively; in column 7, the dependent variable is the total time spent on domestic activities. Basic controls described in Appendix Table A12 include district FE and the woman's age, education, urban residence, caste, religion, and household size and composition. Standard errors in parentheses are clustered by household.

more minutes on employment (column 2), 2 more minutes on home production (column 3) and 2 fewer minutes on childcare (column 6), with no change in domestic work (column 4). This suggests that MILs may not ease their daughters-in-law's domestic burdens.

The difference in the pattern of time use for eldercare in column 5 is worth special mention, since we are concerned here with what happens when there are more elderly people in the household. The coefficient estimates indicate that co-residence with a FIL is associated with less time spent on eldercare, whereas that with a MIL is associated with more time on eldercare. One might have expected the opposite signs given the negative employment effect of co-residence with FILs. However, in both cases, the parameter estimates amount to roughly a minute and 99% of the sample spends no time on this activity. So, while it is possible that domestic work subsumes some activities that may constitute eldercare, the data suggests that eldercare alone is unlikely to account for the lower employment we saw in our main results.[15]

These findings, based on a single cross-section, are merely suggestive and as Deshpande and Kabeer (2019) point out, there is an inherent "fuzziness" between how women's employment and other types of work are defined in India. Still, taking the TUS data at face value, any potential increase in time co-residing women spend on domestic activities seems too small

[15]Childcare and eldercare time use estimates do not change dramatically in the older versus younger age groups for any of the categories except domestic work, where older women co-residing with MILs spend more time on domestic work than their younger counterparts; see Appendix Table A13.

to account for their lower employment rates. On average, employed women in this sample work spend 276 minutes on paid employment, but column 7 indicates that women who co-reside with FILs spend only 7 more minutes in total on domestic activities, with no difference among those co-residing with MILs. It is, of course, possible that the *amount* of time spent on domestic activities is less relevant than the *timing* of these activities. For example, if social norms oblige daughters-in-law to cook and serve lunch to FILs at midday, this would make it difficult for them to have a job. In the next section, we explore the role of social norms more broadly.

5.3. **Social Norms.** Conservative gender norms in India often limit women's agency and many such norms are internalized by, and enforced within, families. A number of studies have focussed on how Indian husbands constrain their wives' agency (e.g. Field et al. (2021) and Bernhardt et al. (2018)). Intra-household power dynamics may, however, be different when PILs reside in a household if norms of filial piety vest decision-making authority in them, rather than their son (the woman's husband) (Sen et al., 2006; Anukriti et al., 2020). Since older generations are likely to be more socially conservative than younger generations, the adoption of more conservative gender-based norms by PILs—amounting to more stringent restrictions on women's agency—are another potential explanation for why women are less likely to participate in the labour force.

In this section we explore the possibility that this is at play by examining how women's agency varies by their co-reside with PILs status, along three different dimensions. First, we ask who has the most decision-making authority within the household. If the answer is FILs rather than husbands, then this provides some suggestive evidence that gender- and generational norms are at play in household decision making. Second, we ask whether constraints on married women's mobility outside the house—a traditional gender-based norm—is more prevalent in households where PILs co-reside. If so, then this seems likely to impede these women's ability to participate in the labour force. Finally, we ask whether women in these households have less financial autonomy; this too would be detrimental to their labour force participation.

We use data from the IHDS Eligible Women Survey, which administers a series of questions concerning who has decision-making authority in the household; women's mobility outside the household; and women's financial autonomy. In 2005, eligible women were those aged 15-49 who were married, divorced or widowed; we restrict our attention to married women. In 2012, these women were re-surveyed.

As a first step, we replicate the main employment estimates presented in Table 2 using the eligible women sub-sample. The results, presented in Appendix Table A15, are consistent with those from the full sample: the IVFE estimates indicate that co-residence with a FIL reduces employment by a statistically significant 4.2 percentage points (10%), while co-residence with a MIL has no statistically significant on employment. This provides reassurance that the evidence on the role of norms that we explore in this section is relevant for exploring our main result regarding the negative FIL co-residence effect (and null MIL co-residence effect) on employment.

With respect to the first dimension of women's agency—decision-making authority—the woman's questionnaire asks the respondent who in the family has the "most say" regarding (1) whether to buy an expensive item such as a TV or a fridge; (2) whom [their] child should marry; (3) what to do if [their] child falls sick; (4) the number of children [she] should have; and (5) what to cook on a daily basis.[16] The possible responses to these questions are: the woman (i.e. the respondent); her husband; the senior male; the senior female in the family; or "other". (We ignore the "other" group in our analysis.) It is important to note that one person having the "most say" does not preclude the possibility that decisions are made jointly by the family. Rather, it highlights that some family members may hold more sway than others in household decision making.

The survey notes that decision-makers in the family need not reside in the household, so the identity of the woman and her husband are clear but that of the senior male or the senior female is not made explicit. This means that we cannot be sure that the "senior male" is a co-residing FIL and a "senior female" is a co-residing MIL. The data show, however, that in almost all cases where a FIL is present, he is listed as the household head. Hence, it seems reasonable to assume that a co-residing FIL is almost always the "senior male". In accordance with tradition, his wife—the MIL—would then be considered the "senior female".

We investigate whether decision-making authority in the household changes depending on whether a FIL or MIL is present in the household by estimating equation (1) with 20 (= 4 decision makers $\times$ 5 decisions) different left hand side variables, for which summary statistics are furnished in Appendix Table A14. It is worth emphasising that this is a descriptive exercise, especially since families with and without a PIL present may differ in other ways,

[16]This question does not preclude the possibiity that decisions are made jointly in the family or that a woman has *some* say. IHDS also poses a direct question regarding who decides whether a woman can work; unfortunately, over 57% of the responses to this question are missing.

including family composition. (For example, FE estimates indicate that families with FILs have fewer young children and fewer adults above the age of 50.)

Figure 5 presents FE coefficient estimates for β_F (top panel) and β_M (bottom panel). It summarizes who has the most say regarding the corresponding decision (listed in the figure legend)—the woman (column 1), her husband (column 2), a senior male (column 3), or a senior female (column 4)—when a FIL co-resides (top panel) and/or a MIL co-resides (bottom panel).

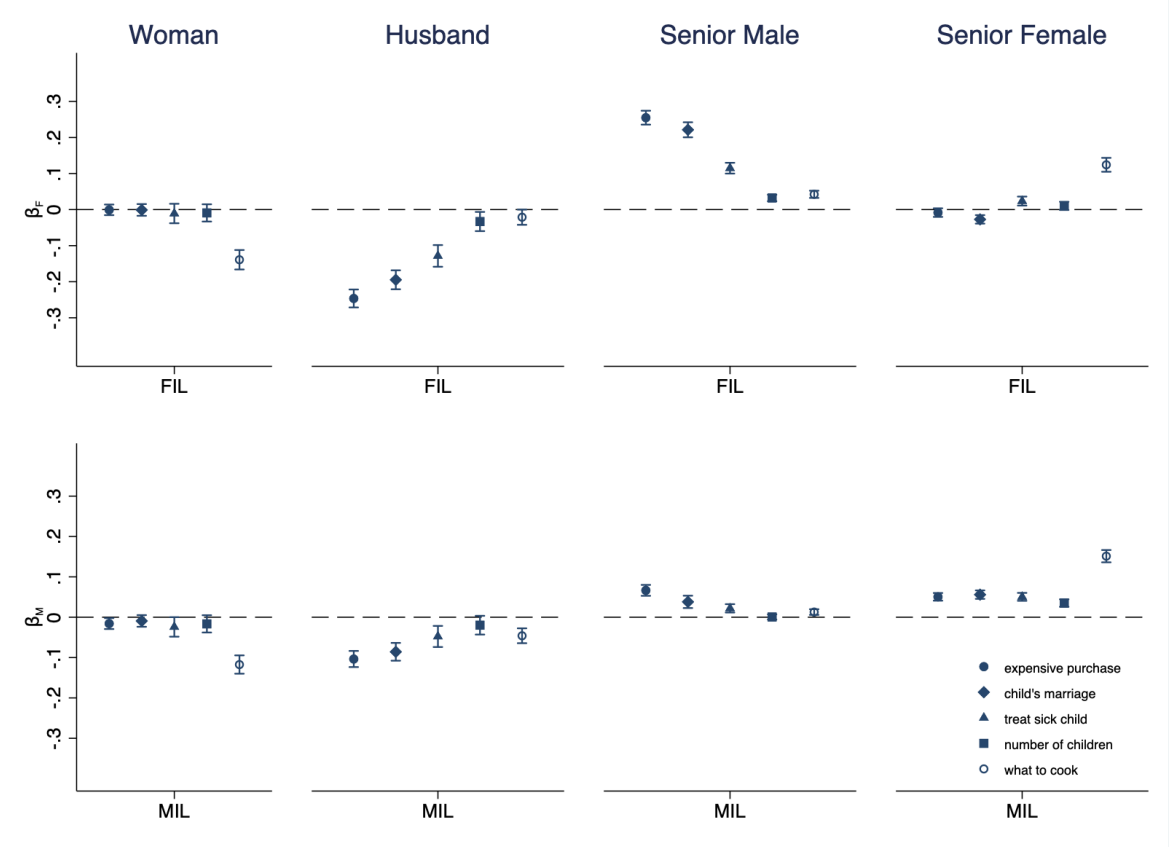


Figure 5. Who Has Household Decision Making Authority? *Notes.* This figure depicts FE coefficient estimates for β_F in the top panel and β_M in the bottom from equation (1). The 40 points on the graph correspond to estimates from 20 different regressions (one for β_F and one for β_M). The dependent variables correspond to which of 4 people in the family has the most say regarding 5 different decisions ($20 = 4 \times 5$). The person with the most say is listed in the column headings: the woman (i.e. the respondent), her husband, the senior male, or the senior female. The decisions correspond to 1. making an "expensive purchase"; 2. their "child's marriage"; 3. how to "treat [a] sick child"; 4. the "number of children" she should have; and 5. "what to cook". The data from the IHDS Eligible Women's Questionnaire. Controls are the same as in Table 2. Confidence intervals are from standard errors clustered at the household level.

The graphs in column 1 show that there is little difference in a married woman's say depending on co-residence with either a FIL or MIL along the first four decision dimensions:

expensive purchases, a child's marriage, how to treat a sick child, or the number of children to have. The presence of a FIL or MIL is, however, associated with substantially less say when it comes to what to cook. This pattern likely reflects norm-driven gender divisions in the domain of agency. Men tend to have the most say when it comes to decisions with potentially large cost implications for the family (such as the first four), while women hold sway in the kitchen; see Appendix Table A14.

If married women co-residing with PILs don't have the most say in household decision-making, then who does? The answer in column 2 indicates that it is not her husband. He is significantly less likely to have the most say along all five decision dimensions, especially when it comes to making an expensive purchase, his child's marriage, and treating his sick child. And for each of these decisions, co-residing with his father is associated with even less authority than co-residing with his mother.

Column 3 suggests that the answer to the question of who has the most say is "the senior male" who, we argued earlier, is likely the FIL in filial households. The fact that the graphs in column 3 are practically inverse mirror images of their neighbours in column 2 would be consistent with a shift in authority from the woman's husband to her co-residing FIL, which is entirely consistent with the norm of filial piety. As for the senior female in the household, the last point in column 4 indicates that she has significantly more likely to have the most say regarding what to cook when she co-resides either alone or together with the FIL, but only marginally more authority along the remaining four decision dimensions. Appendix Figure A8 suggests that the small increase in a MIL's authority along these dimensions comes from families in which only a MIL (and not a FIL) co-resides.

Figure 5 suggests that when PILs co-reside, both gender and generations matter. Gender-based norms dictate that women have the most say regarding what to cook, but men decide on expensive purchases, as well as children's marriage and children's health care. Filial piety demands that the final word rests with elders in the family and, in filial households, these are fathers- and mothers-in-law. To the extent that older generations adhere to more conservative gender-based norms than younger generations, we might expect that co-residence with PILs places greater practical restrictions on women's agency.

Figure 6 lends corroborative support to this by showing that women tend to have considerably less agency outside the household when co-residing with PILs. It shows FE estimates for β_F and β_M in equation (1) for 6 different measures of women's mobility outside the household, and 2 measures of financial autonomy. The first two columns capture conditional

differences in mobility. Column 1 shows that women co-residing with either PIL are more likely to need permission to visit a local shop, a relative's home, or a health center. Column 2 shows that they are less likely to be able to visit any of these places alone, and significantly so in each case when they co-reside with a FIL. Column 3 examines outcomes related to financial autonomy. It shows that although co-residence is not significantly correlated with having their name on a bank account, women who co-reside with either a FIL or a MIL are significantly less likely to have cash in hand for household expenditures, which in a cash economy suggest less *de facto* financial autonomy.

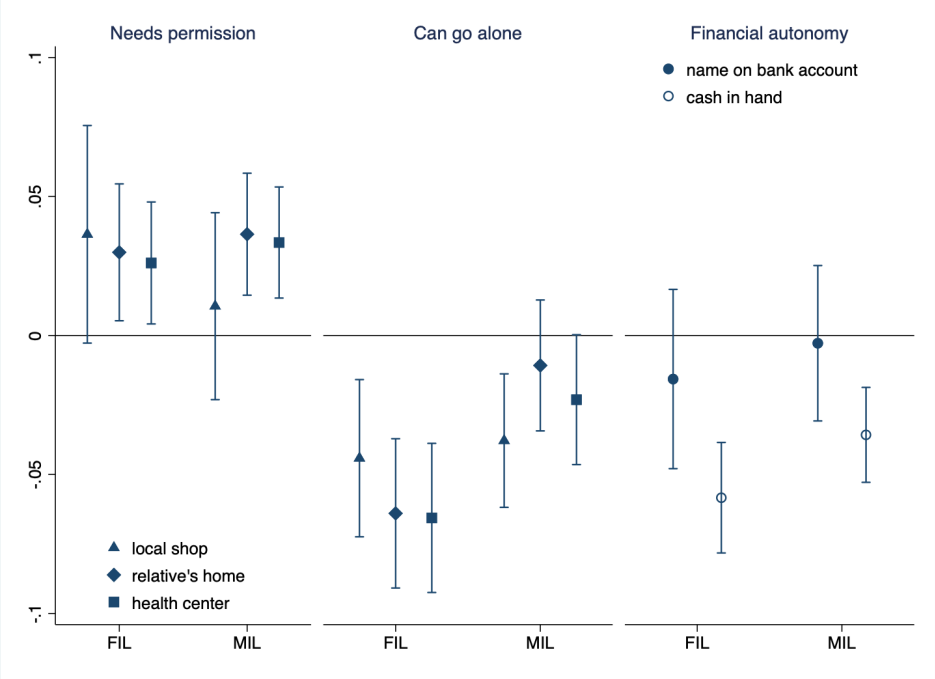


Figure 6. Mobility & Financial Autonomy *Notes.* This figure depicts FE coefficient estimates for β_F (FIL) and β_M (MIL) from equation (1), for 8 different regressions. The 3 dependent variables in column 1 are whether (=1) or not (=0) the woman needs permission to visit the local shop; a relative's home; or a health center. In column two, it is whether or not the woman can go alone to these places. In column 3, the dependent variables are whether or not the woman has her name on a bank account and whether or not she has cash in hand. The data from the IHDS Eligible Women's Questionnaire. Controls are the same as in Table 2. Confidence intervals are from standard errors clustered at the household level.

To summarize the findings presented in this subsection regarding social norms and women's agency, we construct seven different standardized weighted indices, which capture decision making authority within the household; mobility outside the home; and financial autonomy. This is done using the generalized least-squares method of weighting proposed by Anderson

(2008).[17] The decision-making authority index comprises binary decisions along the five dimensions described in Figure 5, and we construct four such indices corresponding to who in the family has the most say regarding these decisions. Two mobility indices correspond to whether a woman needs permission to visit the three places described in Figure 6; and whether she can visit these places alone. Finally, the financial autonomy index comprises the items listed in column 3 of Figure 6. These indices and their constituent elements are summarized in Appendix Table A14.

Index:	Decision-making authority				Mobility		Finance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Woman	Husband	Sen. Male	Sen. Female	Permission	Visit alone	Fin. autonomy
Co-resides w/ FIL (β_F)	-0.142***	-0.372***	1.358***	0.145*	0.073**	-0.163***	-0.138***
	(0.028)	(0.031)	(0.072)	(0.076)	(0.029)	(0.032)	(0.029)
Co-resides w/ MIL (β_M)	-0.177***	-0.209***	0.216***	0.990***	0.090***	-0.064**	-0.077***
	(0.025)	(0.027)	(0.052)	(0.064)	(0.026)	(0.028)	(0.025)
Observations	43,651	43,651	43,651	43,651	42,649	43,014	43,693
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Individuals	21,885	21,885	21,885	21,885	21,885	21,868	21,885
Adj. R-squared	0.012	0.036	0.074	0.059	0.036	0.041	0.196
$\beta_F = \beta_M$	0.433	0.001	0.000	0.000	0.709	0.045	0.180

Table 6. Co-residence & Social Norms Indices*Notes.* This table presents coefficient estimates for β_F, and β_M in equation (1), using individual FE for the IHDS eligible women sample. The dependent variables, listed in the column headings, are standardized weighted indices. In columns 1-4, this index captures variable who in the household has the "most say" regarding making an expensive purchase, their child's marriage, how to treat a sick child, the number of children a woman should have, and what to cook: the woman (column 1), her husband (column 2), the senior male (column 3), or the senior female (column 4). In column 5 the index pertains to mobility outside the house, capturing whether the woman needs permission to visit the local shop, a relative's home, and a health center. In column 6, the analogous mobility index pertains to whether she is allowed to visit these three places alone. The dependent variable in column 7 is an index capturing financial autonomy in terms of having her name on a bank account and cash on hand. The remaining variables and controls are as in column 3 of Table 2. Robust standard errors in parentheses are clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1.

Table 6 summarizes our results from this subsection by presenting individual FE estimates of β_F and β_M from equation (1), with each column corresponding to a different standardized weighted index described in the column headings. Columns 1-4 describe conditional differences in who has decision making-authority decision depending on co-residence status.

[17]The summary index is created by using the user written STATA command SWINDEX, which puts greater weight on uncorrelated indicators and lower weight on correlated indicators. Intuitively, this means that uncorrelated indicators, which represent "new" information, receive more weight (Schwab et al., 2020). The weighting explains why the coefficients on the index are generally larger than the coefficients on individual binary variables.

Column 1 confirms that women co-residing with a FIL or a MIL have less decision-making authority, and the last row of the table indicates that this reduction is statistically indistinguishable depending on which PIL co-resides. Column 2 shows co-residence is also associated with less decision-making authority in the hands of husbands, and magnitude of the reduction is larger when the FIL co-resides, than when the MIL co-resides. The estimates in columns 3 and 4 indicate that senior males and females—typically the FIL and MIL, respectively—tend to have the most say in household decisions when they co-reside.[18]

Columns 4 and 5 of Table 6 describe conditional differences in mobility outside the household. They confirm that women co-residing with either PIL are more likely to need permission to visit places outside the home and are less likely to be permitted to visit these places alone. Whereas the need for permission is statistically the same whether a FIL or MIL is present, women co-residing with a FIL are much less likely to be permitted to visit these places alone. Finally, column 7 confirms that women who co-reside with a FIL or a MIL have significantly less financial autonomy.

In sum, the results in this subsection indicate that married women who co-reside with PILs have significantly less agency than those who don't. This is evident in terms of decision-making authority within the household, mobility outside the home, and financial autonomy. This pattern is consistent with gender norms that constrain female agency, as well as norms of filial piety which vest authority in elder family members—in this case, a co-residing FIL or MIL—who are likely to conform to more conservative traditions regarding their daughter-in-law's place in the home. As such, the practice of these norms in filial households seems likely to play a role in explaining lower employment among women who reside in such families.

6. Conclusion

We show that co-residence with FILs reduces the employment of married women in India by 11-13%, but co-residence with MILs does not. This result is supported by the finding that employment increases following the death of a co-residing FIL, but does not change upon the death of a co-residing MIL. Although we cannot rule out the possibility that a negative income effect plays a role in lowering women's employment, we do not find compelling support for this explanation. There is some evidence that PILs' presence increases their

[18]The estimates in column 3 likely reflect the role of a FIL as the main decision maker when both PILs are present; those in column 4 likely reflect single-in-law households, most of which comprise a MIL, not a FIL.

daughter-in-law's domestic responsibilities. But the magnitude of the shift in time use seems too small to account for changes in employment status arising from co-residence. The most compelling explanation appears to be the combination of gender-based norms and norms of filial piety, which means that older and more conservative co-residing PILs have more say in household decision-making, and place more restrictions on their daughters-in-law's agency. Indeed, this is what we see in the data: women co-residing with PILs have less agency, and there appears to be a shift in decision-making authority away from their husbands and towards FILs and (at least in the kitchen) MILs.

There are two main limitations to our analysis. First, although all signs point to the presence of FILs in the household being key to lowering married women's employment, data limitations mean that technically speaking we are unable to distinguish a "FIL effect" from a "PIL effect". Second, although we find suggestive evidence that social norms play a key role in explaining our main finding, we are unable to draw firm causal inference regarding the potential mechanisms at play.

What our results do indicate is that family structures can operate in subtle ways depending on cultural contexts. Whereas in countries like the U.S. and Germany the proximity of parents-in-law can alleviate demands on women's time and facilitate their labour force participation (Compton and Pollak, 2014; Garcia-Moran and Kuehn, 2017; Posadas and Vidal-Fernandez, 2013), in India this seems not to be the case. Domestic demands on women's time are, if anything, larger and even if this weren't the case, social norms constraining women's ability to work persist.

At some level, it should not be surprising that in a patriarchal society, FILs rather than MILs matter for women's employment. Yet, the role of FILs as a constraint on women's employment has been largely overlooked. The robustness of this finding in our analysis coupled with the pattern of decision making authority in employment-relevant domains being vested in the FIL, suggests that models of household decision making may benefit from incorporating a richer set of agents, capturing both gender and generational frictions. At present, most models of household bargaining involve a husband and wife. Our results suggest that in filial families, FILs and, on some dimensions MILs, should also be considered—not just in models but also in policy design, particularly when it comes to influencing social norms in an effort to increase women's employment in India.

This paper raises a number of open questions for researchers and policy makers concerned with India's low female employment. Do factors such as urbanization or formal care provision for the elderly, which may lead to the dissolution of filial family structures, increase women's employment? Are factors, such as labour-saving home appliances or childcare provision, which should in principle reduce domestic demands on a woman's time, effective in practice given co-residing PILs' constraints on women's agency? Is a negative income effect actually at play in explaining our main result? Would norm-manipulating interventions aimed at increasing women's employment be more effective if they were targeted at FILs, MILs, or husbands? These and other questions are fertile grounds for future research.

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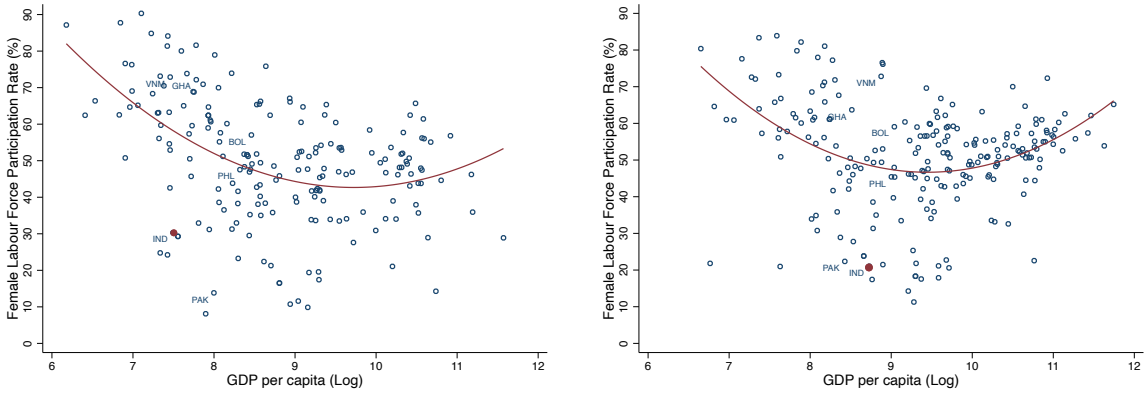
APPENDIX: FOR ONLINE PUBLICATION



(a) FLFP 1991 **(b)** FLFP 2017

Figure A1. Female Labour Force Participation *Notes.* This figure shows country average female labour force participation rates in 1991 and 2017. Source: ILO & WDI.

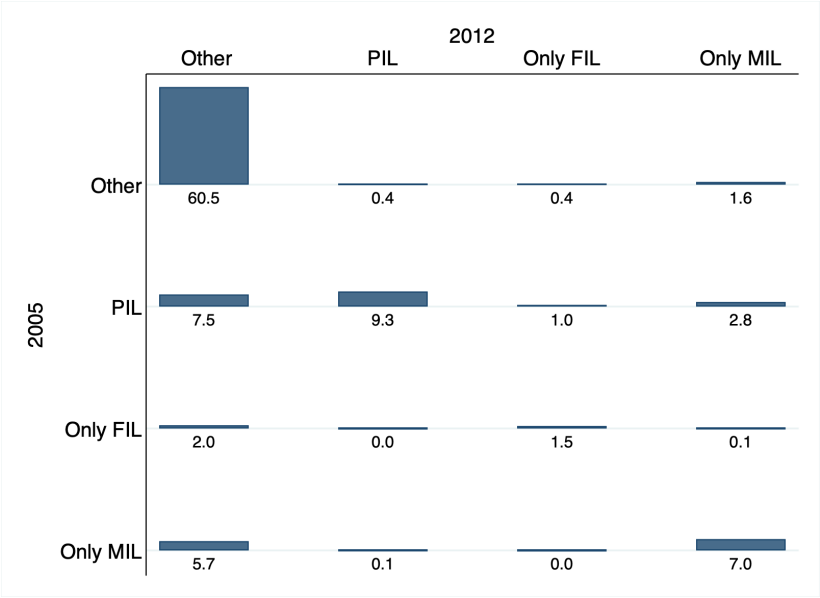
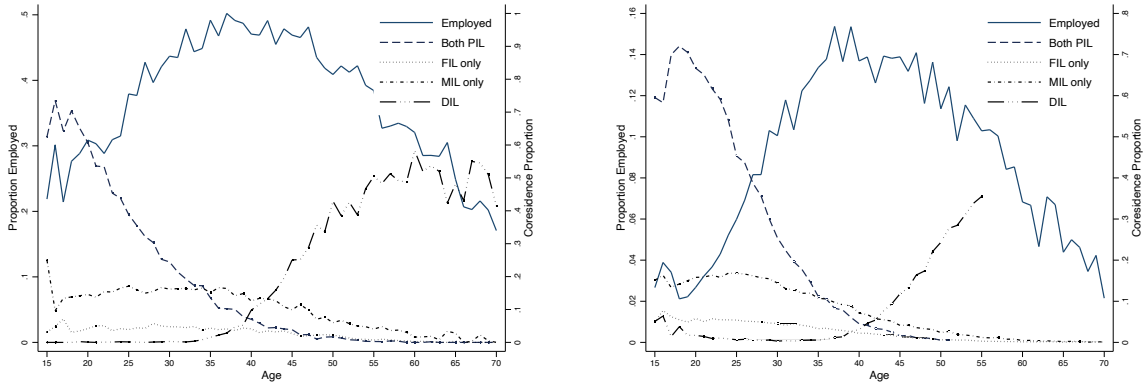


Figure A2. Change in Household Structure Between Survey Rounds. *Notes.* This figure uses the IHDS data panel to show how intergeneration co-residence changes between the years 2005 and 2012. The sample includes women of working age (15 -70 years) and married in both years. Other includes nuclear and fraternal joint families. Co-residence with PIL here indicates co-residence with both a FIL and a MIL.



(a) IHDS **(b)** CPHS

Figure A3. Women's Employment and Different Co-residence Configurations *Notes.* This figure depicts the negative correlation between co-residence with different PILs configurations and employment. Proportion of employed women is shown on the left-hand y-axis, and the proportion residing with the respective in-law, on the left-hand y-axis. Panel (a) uses pooled IHDS data and panel (b) use CPHS data, with variables as described in Section 2. In IHDS, a woman is categorized as employed if she works at least 240 hours in an income generating activity in the past year; in the CPHS, a woman is categorized as employed if being "employed" as on the day of the survey. FIL only (MIL only) pertains to women who co-reside with only their FILs (MILs) and DIL to co-residence with daughters-in-law.

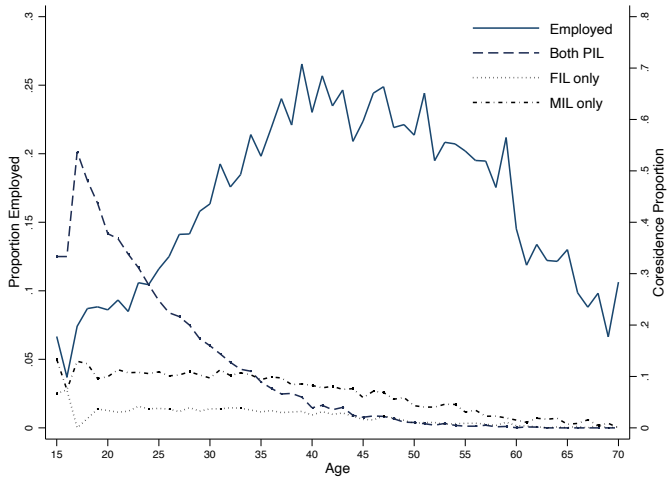


Figure A4. Women's Employment and Different Co-residence Configurations *Notes.* This figure depicts the negative correlation between co-residence with different PILs configurations and employment. Proportion of employed women is shown on the left-hand y-axis, and the proportion residing with the respective in-law, on the left-hand y-axis. A woman is considered employed if paid employment outside the household is the woman's primary activity. Data are from TUS 2019.

	Full Sample			Women's Questionnaire		
	2005	2012	Overall	2005	2012	Overall
Employed	0.40	0.44	0.42	0.42	0.47	0.44
Co-resides with FIL	0.24	0.13	0.19	0.23	0.14	0.19
Co-resides with MIL	0.33	0.21	0.27	0.33	0.24	0.28
Co-resides with DIL	0.12	0.19	0.16	0.03	0.11	0.07
Woman's Age						
15 -24	0.16	0.01	0.09	0.16	0.01	0.09
25 - 34	0.32	0.26	0.29	0.39	0.27	0.33
35 - 44	0.27	0.32	0.30	0.35	0.41	0.38
45 - 54	0.17	0.24	0.20	0.10	0.29	0.19
55 - 70	0.07	0.17	0.12	0.00	0.02	0.01
Husband's Age						
15 -24	0.06	0.00	0.03	0.05	0.00	0.02
25 - 34	0.26	0.13	0.20	0.29	0.12	0.20
35 - 44	0.29	0.30	0.30	0.38	0.36	0.37
45 - 54	0.22	0.28	0.25	0.25	0.35	0.30
55 - 70	0.17	0.29	0.23	0.03	0.16	0.10
Woman's Education						
No Education	0.50	0.48	0.49	0.46	0.44	0.45
Primary or below	0.23	0.24	0.24	0.24	0.25	0.25
Secondary or below	0.19	0.19	0.19	0.20	0.21	0.20
High School	0.05	0.05	0.05	0.05	0.06	0.05
Bachelors and above	0.04	0.04	0.04	0.04	0.04	0.04
Husband's Education						
No Education	0.26	0.26	0.26	0.25	0.25	0.25
Primary or below	0.28	0.28	0.28	0.28	0.28	0.28
Secondary or below	0.29	0.28	0.29	0.30	0.29	0.29
High School	0.09	0.09	0.09	0.09	0.09	0.09
Bachelors and above	0.08	0.09	0.09	0.09	0.09	0.09
Urban	0.30	0.32	0.31	0.31	0.34	0.33
Caste and Religion						
Brahmin	0.05	0.05	0.05	0.05	0.05	0.05
Forward caste	0.17	0.17	0.17	0.17	0.17	0.17
OBC	0.36	0.36	0.36	0.35	0.35	0.35
Dalit	0.20	0.20	0.20	0.21	0.21	0.21
Adivasi	0.08	0.08	0.08	0.08	0.08	0.08
Muslim	0.11	0.11	0.11	0.11	0.11	0.11
Christian, Sikh, Jain	0.03	0.03	0.03	0.03	0.03	0.03
Household Size and Composition						
Under 6	0.68	0.53	0.61	0.65	0.44	0.55
6-10	0.47	0.47	0.47	0.52	0.42	0.47
11-15	0.60	0.61	0.61	0.68	0.64	0.66
Over 50	1.84	2.02	1.93	1.79	2.06	1.92
No. Observations	33,314	33,314	66,628	21,885	21,885	43, 770

Table A1. Summary Statistics: IHDS Data. *Notes.* This table shows summary statistics for IHDS 2005 and 2012.

	N	Mean	SD
Employed	1,921,843	0.106	0.308
Not Homemaker	1,921,843	0.110	0.313
Co-resides with FIL	1,921,843	0.145	0.352
Co-resides with MIL	1,921,843	0.194	0.396
Age (years)	1,921,843	42.351	12.026
Education (highest grade or level)	1,696,083	5.981	3.822
Urban	1,921,843	0.659	0.474
Caste and Religion			
Upper Caste	1,893,222	0.246	0.431
Intermediate Caste	1,893,222	0.106	0.307
OBC	1,893,222	0.389	0.488
ST	1,893,222	0.207	0.405
SC	1,893,222	0.052	0.223
Hindu	1,921,829	0.851	0.357
Muslim	1,921,829	0.097	0.296
Other Religion	1,921,829	0.053	0.224
Household size & Composition			
0-5	1,921,843	0.268	0.593
6-10	1,921,843	0.291	0.588
11-15	1,921,843	0.429	0.723
51+	1,921,843	2.102	1.500

Table A2. Summary Statistics: CPHS Data. *Notes.* This table shows summary statistics for 12 consecutive waves of the CPHS, from 2016 to 2019.

Dependent Variable: Employed				
	Logit (1)	Logit (2)	Conditional Logit (3)	Conditional Logit (4)
Co-resides with FIL (β_F)	-0.078***	-0.048***	-0.044***	-0.063***
	(0.007)	(0.006)	(0.012)	(0.019)
Co-resides with MIL (β_M)	0.002	0.017***	0.003	-0.004
	(0.006)	(0.005)	(0.010)	(0.017)
Observations	66,628	66,628	19,574	7,388
Basic Controls	No	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes

Table A3. IHDS: Logit estimates *Notes.* This table presents marginal effects for Logit (columns 1-2) and conditional logit coefficient estimates for β_F, and β_M in equation (1), analogous to those presented in columns 1-4 in Table 2. Sample loss in columns 3 and 4 is due to lack of variation in employment within individuals across survey rounds.*** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed					Fixed Effects 2SLS		
	OLS (1)	OLS (2)	FE (3)	FE (4)	FS FIL (5)	FS MIL (6)	Second Stage (7)
Co-resides with FIL (β_F)	-0.087***	-0.050***	-0.039***	-0.046***			-0.058***
	(0.007)	(0.007)	(0.011)	(0.012)			(0.019)
Co-resides with MIL (β_M)	-0.024***	0.014**	0.001	-0.010			0.024
	(0.006)	(0.006)	(0.010)	(0.012)			(0.023)
FIL died					-0.733***	0.063***	
					(0.007)	(0.011)	
MIL died					0.108***	-0.694***	
					(0.009)	(0.008)	
Observations	47,446	47,446	47,446	22,498	22,498	22,498	22,498
Basic Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes	Yes
R-squared	0.037	0.192	0.040	0.050	0.573	0.518	
No. Individuals			26,618	11,835	11,835	11,835	11,835
First Stage F-Stat					2,715	2,255	
$\beta_F = \beta_M$	0.000	0.000	0.03	0.072			0.001

Table A4. IHDS: Women Aged 45 or Younger *Notes.* This table presents coefficient estimates for β_F, and β_M in equation (1), analogous to those in Table 2, for women aged 45 or below. *** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed					
		Age Interval (years)			
	Quadratic	2	5	10	15
	(1)	(2)	(3)	(4)	(5)
			a. LPM		
Co-resides with FIL (β_F)	-0.048***	-0.048***	-0.048***	-0.050***	-0.052***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Co-resides with MIL (β_M)	0.018***	0.018***	0.017***	0.017***	0.015***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Observations	66,628	66,628	66,628	66,628	66,628
Adj. R-Squared	0.186	0.187	0.186	0.185	0.183
			b. FE 2SLS		
Co-resides with FIL (β_F)	-0.050***	-0.050***	-0.050***	-0.050***	-0.048***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Co-resides with MIL (β_M)	0.012	0.012	0.014	0.016	0.022
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Observations	24,712	24,712	24,712	24,712	24,712
No. Individuals	12,356	12,356	12,356	12,356	12,356
Adj. R-Squared	0.000	0.000	0.000	0.000	0.000

Table A5. IHDS: Alternative Age Specifications *Notes.* This table presents OLS (panel a) and FE 2SLS (panel b) coefficient estimates for β_F and β_M in Equation (1) analogous to those in columns 1 and 6 of Table 2, with alternative age specifications. Column 1 includes a quadratic age term; column 2 has dummies for 2-year age intervals; column 3 for 5-year intervals; column 4 has 10-year intervals; and column 5, 15-year intervals. *** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed	(1)	(2)	(3)	(4)
Co-resides with FIL (β_F)	-0.043***	-0.017	-0.017	
	(0.010)	(0.016)	(0.016)	
Co-resides with MIL (β_M)	-0.002	0.006		0.006
	(0.009)	(0.010)		(0.010)
Co-resides with both PILs (β_P)		-0.038**	-0.033*	-0.055***
		(0.019)	(0.017)	(0.012)
Co-resides with only FIL (β_{oF})				-0.017
				(0.016)
Co-resides with only MIL (β_{oM})			0.006	
			(0.010)	
Observations	66,628	66,628	66,628	66,628
Basic Controls	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.023	0.023	0.023	0.023
No. Individuals	33,314	33,314	33,314	33,314
$\beta_F = \beta_M$	.012	.207		
$\beta_F = \beta_P$		.518	.625	
$\beta_M = \beta_P$		.073		.001
$\beta_{OF} = \beta_M$				.207
$\beta_{OF} = \beta_P$				.043
$\beta_F = \beta_{OM}$			.207	
$\beta_{OM} = \beta_P$			.043	

Table A6. IHDS: Alternative PIL specifications. *Notes.* This table presents FE coefficient estimates for different specifications of co-residing PILs, which are variants of equation (1) for the full sample of married women aged 15-70 in IHDS data. Robust standard errors are clustered at the household level. *** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed			
	Logit	Logit	Conditional Logit
	(1)	(2)	(3)
Co-resides with FIL (β_F)	-0.040***	-0.020***	-0.026**
	(0.002)	(0.002)	(0.013)
Co-resides with MIL (β_M)	-0.008***	-0.001	0.044***
	(0.002)	(0.002)	(0.010)
Observations	1,917,724	1,917,724	441,136
Basic Controls	No	Yes	Yes
Individual FE	No	No	Yes

Table A7. CPHS: Logit estimates *Notes.* This table presents marginal effects for logit (columns 1-2) and conditional logit coefficient estimates for β_F, and β_M in equation (1), analogous to those presented in columns 1-3 in Table 3. *** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed				Fixed Effects 2SLS		
	OLS	OLS	FE	FS FIL	FS MIL	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
Co-resides with FIL (β_F)	-0.039***	-0.016***	-0.005			-0.010*
	(0.002)	(0.002)	(0.003)			(0.006)
Co-resides with MIL (β_M)	-0.025***	-0.002	0.013***			-0.006
	(0.002)	(0.002)	(0.003)			(0.006)
FIL is Dead				-0.963***	-0.032***	
				(0.003)	(0.005)	
MIL is Dead				-0.011***	-0.916***	
				(0.003)	(0.005)	
Observations	1,192,284	1,192,284	1,192,284	1,192,284	1,192,284	1,175,582
Basic Controls	No	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes
Adj. R-squared	0.101	0.109	0.003	0.282	0.190	0.003
No. Individuals			173,299	173,299	173,299	156,597
First Stage F-Stat				4,843	1,840	
$\beta_F = \beta_M$	0.000	0.000	0.000			0.662

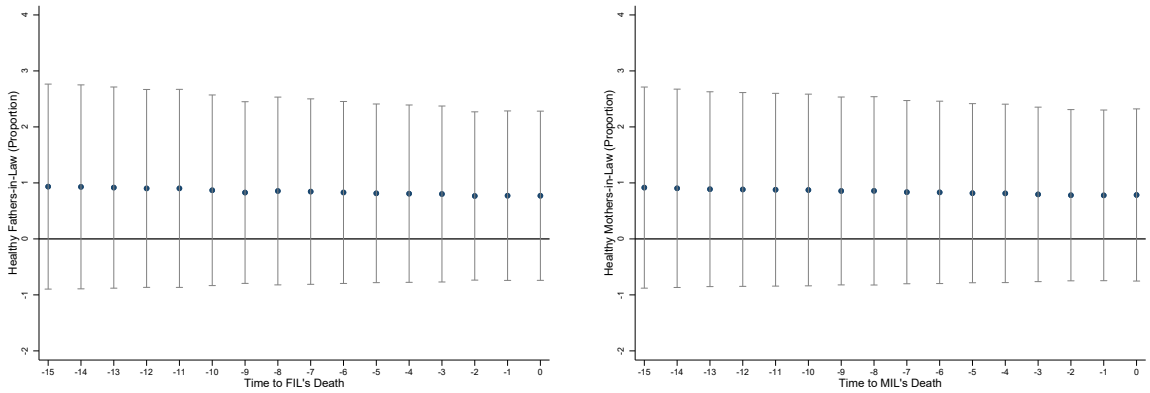
Table A8. CPHS: Women 45 or Younger. *Notes.* This table shows regression estimates analogous to those in Table 3 for a restricted sample of women aged 45 and under. *** p<0.01, ** p<0.05, * p<0.1.

Dependent Variable: Employed						
		Age Interval (years)				
	Quadratic	1	2	5	10	15
	(1)	(2)	(3)	(4)	(5)	(6)
				a. LPM		
Co-resides with FIL (β_F)	-0.017***	-0.015***	-0.015***	-0.016***	-0.018***	-0.021***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Co-resides with MIL (β_M)	-0.000	0.001	0.001	0.000	-0.001	-0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843
Adj. R-Squared	0.100	0.100	0.100	0.100	0.099	0.098
				b. FE 2SLS		
Co-resides with FIL (β_F)	-0.015***	-0.014**	-0.014**	-0.015***	-0.016***	-0.016***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Co-resides with MIL (β_M)	-0.000	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Observations	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843
N Individuals	247,549	247,549	247,549	247,549	247,549	247,549
Adj. R-Squared	0.008	0.009	0.009	0.008	0.005	0.005

Table A9. CPHS: Alternative Age Specifications. *Notes.* This table presents OLS (panel a) and FE 2SLS (panel b) coefficient estimates for β_F and β_M in equation (1) analogous to those in columns 1 and 6 of Table 3, with alternative age specifications. Column 1 includes a quadratic age term; column 2 has a dummy variable for each age (15-70); column 3 has dummies for 2-year age intervals; column 4 for 5-year intervals (replicating the estimates from columns 1 and 6 in Table 3 in panels a and b, respectively); column 5 has 10-year intervals; and column 6, 15-year intervals. Robust standard errors clustered at the household level are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

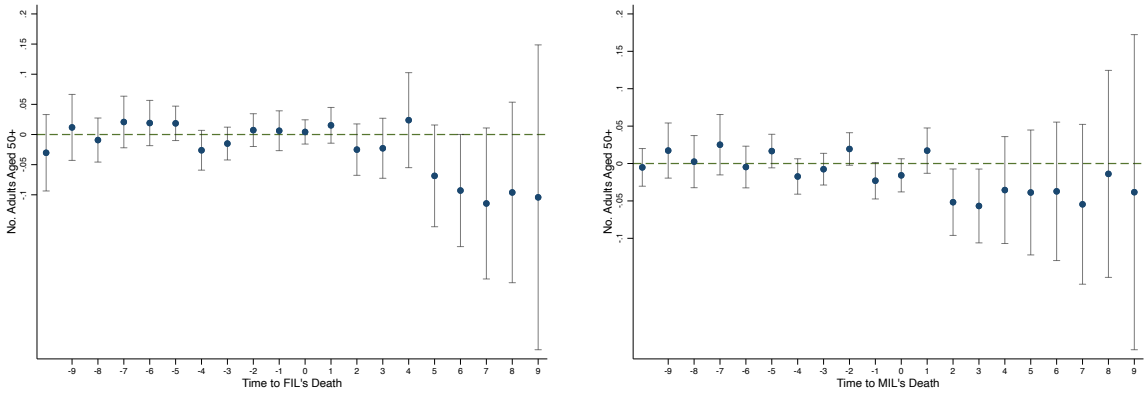
Dependent Variable: "Not Homemaker"				Fixed Effects 2SLS		
	OLS	OLS	FE	FS FIL	FS MIL	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)
Co-resides with FIL (β_F)	-0.031***	-0.014***	-0.003			-0.012**
	(0.002)	(0.002)	(0.003)			(0.006)
Co-resides with MIL (β_M)	-0.007***	0.001	0.015***			0.000
	(0.002)	(0.002)	(0.003)			(0.005)
FIL is Dead				-0.959***	-0.037***	
				(0.003)	(0.005)	
MIL is Dead				-0.012***	-0.911***	
				(0.003)	(0.004)	
Observations	1,921,843	1,921,843	1,921,843	1,921,843	1,921,843	1,903,428
Basic Controls	No	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes
Adj. R-squared	0.087	0.097	0.005	0.274	0.210	0.005
No. Individuals			247,549	247,549	247,549	229,134
First Stage F-Stat				3568.39	1894.84	
$\beta_F = \beta_M$	0.000	0.000	0.000			0.131

Table A10. CPHS: Alternative Definition of Employment *Notes.* This table presents analogous results to those in Table 3. However, the dependent variable in these regression estimates is "Not Homemaker", which is equal to 1 if a married woman is not a homemaker and 0 if she is a homemaker. *** p<0.01, ** p<0.05, * p<0.1.



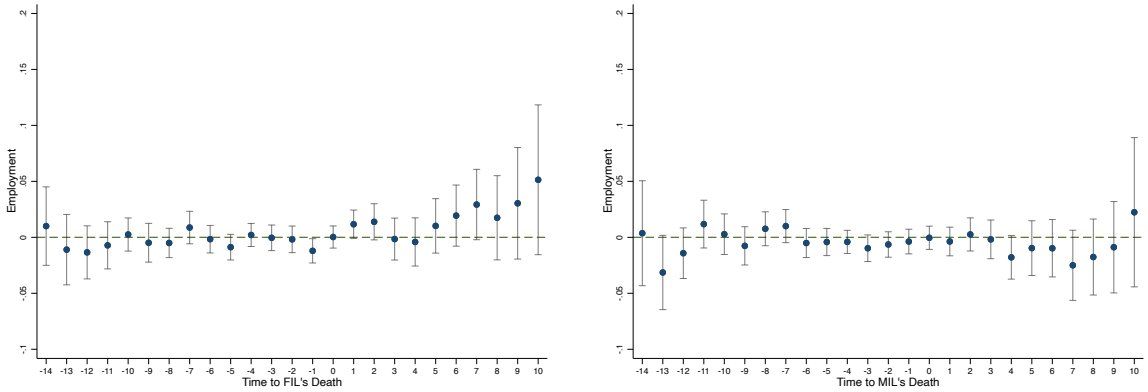
(a) FIL health **(b)** MIL health

Figure A5. Health & Employment Preceding Death of FIL & MIL *Notes.* This figure shows the proportion of FIL and MIL who reported being healthy in the periods leading up to the time of their death. Source: CPHS 2016-2019.



(a) FIL's Death **(b)** MIL's Death

Figure A6. Family Composition: Number of Other Adults Aged 50+ Around the Death of a PIL: Not Yet Treated Control *Notes.* This figure shows TWFE estimates for μ, with their 95% confidence intervals, in equation (2) for the number of adults aged 50+, besides the woman and the PIL around FIL's death in Panel (a) and MIL's death in panel (b). Units of time in the x-axis are measured in terms of quadrimester. The sample comprises women co-residing with the respective PIL, who then died during the observation period, amounting to 15,520 observations in Panel (a) and 20,191 observations in Panel (b). The control group comprises "not yet treated" women (Callaway and Sant'Anna, 2021). Treatment refers to the death of the PIL. Estimation is implemented using the improved doubly robust DiD estimator based on inverse probability of tilting and weighted least squares (Sant'Anna and Zhao, 2020). All estimates include individual and quadrimester FE, as well as basic controls including age group and children in the household.



(a) FIL's Death **(b)** MIL's Death

Figure A7. Women's Employment Response to Death of Parent-in-law: Never Treated Control *Notes.* This figure shows TWFE estimates for μ, with their 95% confidence intervals, in equation (2), analogous to those in Figure 2, using "never treated" units as the comparison group. The sample comprises women who who were co-residing but whose PIL died during the observation period, and women who co-resided with the respective PIL for the entire observation period, amounting to 253,962 observations in Panel (a), and 335,422 observations in Panel (b).

Time spend on:	Overall (1)	Not Employed (2)	Employed (3)	Difference (4)
Employment (Paid)	70.51	26.05	276.07	250.02
	(157.76)	(93.99)	(218.45)	(1.49)
Domestic Activities				
Home Production	30.80	28.44	41.71	13.27
	(79.98)	(74.30)	(101.52)	(0.73)
Domestic Work (Unpaid)	346.72	366.13	256.99	-109.14
	(151.51)	(147.78)	(135.40)	(0.99)
Eldercare	0.93	0.96	0.79	-0.17
	(12.46)	(12.68)	(11.38)	(0.08)
Childcare	51.59	56.39	29.41	-26.98
	(88.66)	(91.93)	(67.27)	(0.53)
Domestic Activities (Total)	430.04	451.92	328.90	-123.02
	(174.89)	(166.40)	(177.62)	(1.28)
Observations	133,155	109,477	23,678	133,155

Table A11. Employment & Time Use *Notes.* This table shows mean employment and time use of married women aged 15-70, disaggregated by co-residence status with FIL and MIL. Data are from TUS 2019. Standard errors in parentheses are clustered by household.

	N	Mean	SD
Employed	133,155	0.178	0.382
Co-resides with FIL	133,155	0.138	0.344
Co-resides with MIL	133,155	0.190	0.392
Age (years)	133,155	38.725	12.481
Education (highest level)			
Primary	133,155	0.380	0.485
Middle	133,155	0.127	0.332
Secondary	133,155	0.154	0.361
Upper-secondary	133,155	0.134	0.341
Post-secondary	133,155	0.094	0.292
Urban	133,155	0.377	0.485
Caste & Religion			
Upper Caste	133,155	0.228	0.420
OBC	133,155	0.331	0.471
SC	133,155	0.162	0.368
ST	133,155	0.117	0.321
Muslim	133,155	0.123	0.328
Other	133,155	0.040	0.195
Household Size & Composition			
Under 6	133,155	0.666	0.940
6-10	133,155	0.271	0.550
11-15	133,155	0.305	0.609
Over 50	133,155	0.776	0.894

Table A12. Summary Statistics: TUS. *Notes.* This table shows summary statistics for the Indian TUS 2019

		Time (in minutes) Spent On:					
Co-resides with	Employed	Employment	Home Prod.	Dom. Work	Eldercare	Childcare	Dom. Activities (Total)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Under 45			
FIL (β_F)	-0.042***	-19.989***	-0.768	18.514***	-0.539***	-4.267***	12.940***
	(0.005)	(1.889)	(0.926)	(1.889)	(0.172)	(1.156)	(2.192)
MIL (β_M)	0.012***	3.975**	1.329	1.390	0.277*	-3.282***	-0.287
	(0.004)	(1.800)	(0.858)	(1.756)	(0.165)	(1.065)	(2.042)
Observations	89,777	89,777	89,777	89,777	89,777	89,777	89,777
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\beta_F = \beta_M$	0.000	0.000	0.131	0.000	0.002	0.551	0.000
				45 and Older			
FIL (β_F)	-0.023	-4.743	5.906	10.390*	-2.006**	-2.526	11.765*
	(0.014)	(6.233)	(3.659)	(6.072)	(0.805)	(1.589)	(6.415)
MIL (β_M)	0.011	5.303	5.163**	11.748***	3.647***	-0.473	20.085***
	(0.010)	(4.360)	(2.408)	(4.063)	(0.723)	(1.084)	(4.450)
Observations	43,378	43,378	43,378	43,378	43,378	43,378	43,378
Basic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\beta_F = \beta_M$	0.066	0.212	0.872	0.859	0.000	0.313	0.315

Table A13. Time Use Disaggregated by Age Group *Notes.* This table estimates the coefficients in Table 5 separately for the main TUS 2019 sample aged under 45 (top panel) and aged 45 or older. Standard errors in parentheses are clustered by household.

	No FIL (1)	FIL (2)	No MIL (3)	MIL (4)
Decision Making				
	Woman has most say			
Expensive purchase	0.09	0.04	0.09	0.05
Child's marriage	0.10	0.05	0.10	0.06
Treat sick child	0.29	0.21	0.29	0.22
Number of children	0.21	0.17	0.21	0.17
What to cook	0.79	0.54	0.80	0.59
Index	-0.04	-0.45	-0.01	-0.37
	Husband has most say			
Expensive purchase	0.86	0.52	0.87	0.64
Child's marriage	0.83	0.56	0.83	0.65
Treat sick child	0.68	0.54	0.68	0.59
Number of children	0.77	0.73	0.77	0.74
What to cook	0.15	0.08	0.15	0.10
Index	-0.02	-0.57	-0.01	-0.40
	Senior male has most say			
Expensive purchase	0.02	0.37	0.02	0.23
Child's marriage	0.04	0.33	0.04	0.20
Treat sick child	0.01	0.17	0.01	0.10
Number of children	0.00	0.05	0.00	0.03
What to cook	0.00	0.06	0.01	0.04
Index	0.02	1.82	0.06	1.05
	Senior female has most say			
Expensive purchase	0.01	0.05	0.00	0.07
Child's marriage	0.02	0.04	0.01	0.07
Treat sick child	0.01	0.08	0.00	0.08
Number of children	0.01	0.05	0.01	0.06
What to cook	0.03	0.30	0.01	0.26
Index	0.19	1.23	0.00	1.35
Mobility				
	Woman needs permission to visit			
Health center	0.81	0.87	0.81	0.85
Home of friend or relative	0.79	0.84	0.79	0.83
Local shop	0.65	0.67	0.65	0.67
Index	0.01	0.14	0.01	0.11
	Woman can visit alone			
Health center	0.73	0.62	0.73	0.66
Home of friend or relative	0.77	0.67	0.77	0.69
Local shop	0.80	0.69	0.81	0.72
Index	-0.01	-0.33	-0.01	-0.24
Financial Autonomy				
	Woman has			
Cash in hand	0.89	0.81	0.89	0.83
Name on bank account	0.37	0.27	0.37	0.29
Index	-0.02	-0.29	-0.01	-0.23
Observations	36,069	7,701	31,812	11,958

Table A14. Summary Statistics: decision-making authority, mobility, and financial autonomy. *Notes.* This table presents summary statistics from the IHDS Eligible Women Questionnaire, regarding who has the most say regarding the household decisions; whether women can independently decide who to visit outside the home; and whether she has financial autonomy. The final row in each block contains an index of the variables in that block using the generalized least-squares method of weighting as proposed by Anderson (2008).

Dependent Variable: Employed					Fixed Effects 2SLS		
	OLS	OLS	FE	FE	FS FIL	FS MIL	Second Stage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Co-resides with FIL (β_F)	-0.076***	-0.048***	-0.044***	-0.053***			-0.042**
	(0.008)	(0.007)	(0.012)	(0.013)			(0.020)
Co-resides with MIL (β_M)	-0.006	0.020***	0.010	0.004			0.009
	(0.007)	(0.006)	(0.010)	(0.013)			(0.021)
FIL died					-0.766***	0.083***	
					(0.008)	(0.011)	
MIL died					0.095***	-0.742***	
					(0.008)	(0.008)	
Observations	43,770	43,770	43,770	16,016	16,016	16,016	16,016
Basic Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.030	0.194	0.027	0.040	0.619	0.582	
No. Individuals			21,885	8,008	8,008	8,008	8,008
First Stage F-Stat					1,919	2,170	
$\beta_F = \beta_M$	0.000	0.000	0.003				0.033

Table A15. IHDS: Eligible Women Sample *Notes.* This table presents coefficient estimates for β_F, and β_M in equation (1), analogous to those presented in Table 2, but for the eligible women sample. *** p<0.01, ** p<0.05, * p<0.1.

Figure A8. Household Decision Making *Notes.* This figure presents coefficient estimates and their standard errors, analogous to those in Figure 5, except that co-residence variables on the right hand side of the FE regressions include *FIL*, *MIL*, *and* $PIL = FIL \times MIL$, where the later indicates that the woman co-resides with *both* of her PILs.