Intergenerational Links in Women Employment: Evidence from Indonesia[*]

Joseph Marshan [†]

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Abstract

I investigate the existence of an intergenerational link between women's labour supply decisions in Indonesia using rich large-scale longitudinal data known as the Indonesia Family Life Survey (IFLS). This study contributes to limited empirical evidence on intergenerational links in female attachment to the labour market in the context of a developing country. In addition to cross-sectional correlation, I employ a permanent component approach (Chadwick and Solon, 2002; Galassi et al., 2019) to estimate the intergenerational correlation between mothers' and daughters' lifetime employment. I find that a mother's employment affects her daughter's employment decisions in the future. This intergenerational link coefficient is equivalent to more than two additional years of education. Finally, I provide evidence that role-model effects and occupation-specific human capital transfers are the main plausible mechanisms behind the intergenerational correlation. This study highlights the challenges inherent in increasing the female labour supply in a society with slow-moving traditional norms.

1   Introduction

From 1961 to 1990, female labour force participation (LFP) in Indonesia dramatically increased from about 31%[1] to around 50%(ILO[2]). Since 1990, participation has been slowly moving upwards (Cameron et al., 2018). This resemblance of S-shaped female labour force participation is evident in many countries. A growing literature suggests that an intergenerational correlation of employment between mothers and their offspring is responsible for such a dramatic increase in participation (Fernández et al., 2004; Fogli and Veldkamp, 2011; Bertrand et al., 2015) and that this is typically followed by signs of stagnation. Previous studies predominantly point to the relationship between a woman and her mother-in-law as the main cause of such intergenerational correlation (Fernández et al., 2004; Fogli and Veldkamp, 2011). and that this is typically followed by signs of stagnation. Previous studies predominantly point to the relationship between a woman and her mother-in-law as the main cause of such intergenerational correlation (Farre and Vella, 2013; Galassi et al., 2019) s at least as important as the woman to mother-in-law channel.

Most existing studies were carried out in developed countries with certain western cultural and family ties. Thus, it is important to have more empirical evidence from different cultural backgrounds to help us understand the causes and mechanisms behind intergenerational links between mothers and daughters, if they exist. To that purpose, this paper provides empirical evidence that supports the existence of intergenerational correlation in the labour supply between mothers and daughters, using Indonesia as a case study. This paper discusses several potential mechanisms of the intergenerational correlation on the back of cultural and kinship values in Indonesia.

In regards to previous literature, Indonesia offers opportunities to enrich the knowledge of intergenerational links in the female labour supply. Indonesia is the world's largest Muslim population, which, unlike most Muslim countries, has a moderate level of female labour force participation. Such features cannot be separated from the relationship between religion and the fact that Indonesia has diverse indigenous cultures which have diverse attitudes towards gender. This interaction shapes the role of women within the household. In addition to the cultural background, in recent decades, increased education

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[1]The earliest employment statistics come from Indonesia's first Population Census in 1961. The government started to collect the National Labour Market Survey (SAKERNAS) in 1976 which became annually surveyed in 1985.

[2]Data retrieved from https://ilostat.ilo.org/data/country-profiles/?

access and the growing services sector might have affected labour decisions over generations. However, as discussed by Cameron et al. (2018), the role of slow-moving norms, which relate to belief transfer within a household, arguably remains an important factor that drives female labour force participation trends in Indonesia.

I contribute to the literature in three ways. Firstly, I contribute to the relatively limited empirical evidence of the intergenerational link of female labour force participation in developing countries. Systematic efforts to provide such evidence are limited to studies in China (Chen and Ge, 2018; Li and Liu, 2019) and Mexico (Campos-Vazquez and Velez-Grajales, 2014). Studies on social norm effects and intergenerational transmission in terms of female involvement in the labour market in Indonesia are non-existent, to my knowledge. Secondly, from an identification strategy perspective, in contrast to previous studies on the intergenerational correlation of female LFP, my study extends the analysis to include non-married women. Furthermore, with the exception of Galassi et al. (2019), most studies (Fernández et al., 2004; Chen and Ge, 2018) rely on one-period measures of mothers' and daughters' employment, whereas in this paper I also provide an estimate using the lifetime employment approach to handle potential measurement bias. My last contribution to the literature is to complement previous literature to highlight role-model effects and occupation-specific human capital transfer as potential mechanisms behind the intergenerational correlation of employment between a mother and her daughter(s).

This paper is related to the extensive literature on intergenerational links of labour market outcomes (Chadwick and Solon, 2002; Black et al., 2005, 2011; Olivetti and Paserman, 2015). While a large body of work focuses on intensive margins, there have been relatively limited discussions on extensive margins. This paper closely relates to the growing literature that regards social norms and gender attitudes transmission as latent factors that affect female labour force participation. The role of social norms on individual decisions has been a well-studied subject since the seminal paper of Akerlof and Kranton (2000), which laid a theoretical foundation incorporating self-image and social norms in the individual objective function. Bisin and Verdier (2001) extended the framework by showing the role of cultural transmission of ethnic and religious traits that might affect belief transfer between generations. Fernández et al. (2004) used this framework to establish the very first framework on intergenerational transmission in female labour participation. They argue that the marriage market is a possible channel of such intergenerational links. They focus on establishing such links under in-law relationships. Morrill and Morrill (2013) and Farre and Vella (2013), however, provide evidence of direct transmission of mother-daughter intergenerational links using United States observations. They argue that such intergenerational correlation with one's mother is indirect evidence of intergenerational

gender attitude transmission within the family. Further, such transmission is thought to be driven by the role-model effect Jayachandran (2021). This relates to psychological studies which suggest that the social norms internalisation process starts very early in childhood stages and continues up to the adolescent period (Chandler and Connell, 1987).

Recent studies (Fogli and Veldkamp, 2011; Bertrand et al., 2015) attempt to argue that the plateauing feature is closely related to the rigidity of traditional gender norms in society. Surprisingly, even in developed countries, where arguably the education level for women has significantly increased, they find that traditional gender norms can explain some lowering participation rates, especially for married women. The prediction is that changing social norms will largely contribute to female labour force participation, as is arguably the case in China (Chen and Ge, 2018)) and the United States (Kuziemko et al., 2018). Lastly, this study relates to the growing literature on how social networks and community beliefs affect women's decision to supply labour (Nicoletti et al., 2018; Bursztyn et al., 2018). When a woman decides to work, she is influenced by her gender attitudes towards work and the norms perceived by society as well as peer-effects.

In Indonesia, there is a growing literature on intergenerational transmission. Silalahi and Setyonaluri (2018) find an intergenerational correlation of fertility decisions between mother-daughter pairs. Daughters were found to have similar fertility behaviour on reproductive intention. They argue that this suggests strong intergenerational transmission of family norms.

In terms of education, Duflo (2004) finds evidence that the offspring of cohorts that were exposed to a massive school construction project in the late 70s attained significantly more education. In a similar spirit, Kim et al. (2015) present intergenerational links not only about the extent of education choice but also health status. They find a positive and strong correlation between parents' health and education and their children's health and education. Related to intergenerational links in terms of health and education, Pakpahan et al. (2009) find that this partly explains the persistence of poverty across generations. Reflecting on this existing literature, there is a huge gap in the intergenerational literature in terms of labour market outcomes, in particular from gender perspectives.

I use the Indonesia Family Life Survey (IFLS), a high-quality and rich longitudinal household survey dataset, to draw a relationship between mothers' and daughters' participation in the labour market. I start with a pool of daughters aged 2–19 in IFLS1 in 1993, paired-up with their mothers, then link them to their observed labour outcomes in IFLS5 in 2014. As my baseline estimation, I apply the least square estimate of the daughter's labour force participation in 2014 to the mother's participation in 1993. After controlling for individual and household characteristics such as education, childbearing, age and provincial

fixed effects, I find a positive and significant intergenerational correlation. Next, since the measure of LFP is cross-sectional, I follow the intergenerational literature (Chadwick and Solon, 2002; Galassi et al., 2019) to predict lifetime employment for both mother and daughter observation using the working history module in the dataset.

From the baseline model, I find that having a mother employed in 1993 increases the probability of a daughter participating in the labour market in 2014 by 3.7 %. Further, using the lifetime employment approach, such elasticity increases to 10%. The magnitude is equivalent to two additional years of education. In regards to previous results from other countries such as Morrill and Morrill (2013) and Farre and Vella (2013), my baseline estimation provides a slightly smaller intergenerational correlation. However, my lifetime employment approach provides a similar estimate of intergenerational correlation as Galassi et al. (2019). My results contradict Fernández (2013) of the US case and Chen and Ge (2018) of China's case where they find a null effect of mothers' LFP on their daughters' LFP. I argue that the discrepancies between my findings and some previous findings are driven by several factors. Firstly, previous studies (Morrill and Morrill, 2013; Farre and Vella, 2013; Galassi et al., 2019), focus only on married women. I argue that non-married women would tend to participate in the labour market anyway to support their livelihood regardless of their mother's LFP during their childhood. Secondly, I argue that my specification allows for more covariates to be included in my model due to the richness of my dataset. For instance, Morrill and Morrill (2013) estimation results, lack of the daughters' household covariates such as expenditure and income, which are proven to be significant factors in my estimate. Galassi et al.'s (2019) results, find the largest correlation. They use alternative specifications following the permanent component approach (Chadwick and Solon, 2002) to take into account the life cycle effect and year effect. Their work is more comparable to my specification and results in the next section. Thirdly, I argue that such differences in results may point to the fact that institutional and cultural context matters in preserving intergenerational links. This paper does not discuss cross-country institutional settings, but my results may hint at the issue. Adding proxies of local labour demand changed the result substantially. I claim this as evidence of how important the local labour demand and local institutional settings are in affecting intergenerational links labour supply.

In this paper, I test four possible explanations for the intergenerational correlation of employment between mother and daughter. First, I investigate if a direct transmission of preference drives the intergenerational correlation. To elicit preference toward work for both mothers and daughters, I construct a measure of the utility of work based on job satisfaction information. Using this measure of the utility of work, I test whether the mother and daughter's utility of work is correlated with and substantially affects the magnitude

of the intergenerational correlation coefficient. As a result, the mother-daughter utility of work correlation is evident but those factors do not significantly affect intergenerational correlation. Second, I find some evidence that points to occupation-specific human capital transfer. It emerges from a stronger intergenerational correlation between mothers and daughters who share the same type of occupation. Third, I proceed to test whether community and peer preference toward work might be the confounding factors between mothers' and daughters' labour supply. Using the average employment of women at a community level, I do not find enough evidence to support the hypothesis that peer employment is an important factor that affects the intergenerational correlation of mother-daughter pairs. Further, exploiting community attitudes toward women at work, I do not find enough evidence to suggest a significant difference in intergenerational correlation between those who live in traditional norm-adopting communities and those in the modern communities. I find, however, that daughters are more likely to participate if they live in modern communities. Lastly, I collect three pieces of evidence that support the role-model effect as having a significant role in shaping intergenerational correlation. First, by comparing results from my preferred sample and a less restrictive alternative sample, I find results that imply that cohabitation during childhood preserves a stronger intergenerational link. Second, mother-son intergenerational correlation does exist but to a substantially weaker magnitude. This supports the argument that in the role-model effect, the same-gender effect is stronger than the opposite one. Third, using the household decisions making module from the questionnaire, I construct a measure of household decision-making behaviour of both the mother's household and the daughter's household. I then present a positive correlation between the mother's behaviour and the daughter's behaviour in household decision-making.

The remainder of the paper is organised as follows. I begin by introducing the cultural and gender norms context in Indonesia in Section 2. In Section 3, I discuss the estimation strategy of this study as well as potential bias issues. I present the data used in this study in Section 4, which includes sample selection and variable construction. In Section 5, I present the OLS results of this study and the lifetime employment approach. The potential mechanism is presented in Section 6. Next, in Section 7, I present several robustness checks for my results. Finally, I conclude my study together with a potential future research agenda in Section 8.

2 Kinship and gender norms in Indonesia

Indonesia is the fourth most populous and the largest Muslim-populated country in the world (World Bank, 2019). The archipelagic nation hosts more than 1,300 ethnic groups,[3] which makes Indonesia one of the most culturally diverse nations in the world. However, Bazzi et al. (2019) argue that despite high-level diversity at the national level, most Indonesian live in segregated communities with lower-level diversity.[4]

Despite diverse ethnicities, the patrilineal system dominates kinship practice in Indonesia. Most of the main ethnic groups, such as Javanese, Sundanese, and Bataknese,[5] practice patrilineal cultures. Only a small share of ethnic groups, about 3% of the total population, practice matrilineal systems (e.g. Minangkabau). In regards to marital patterns and post-marriage residence, this dominant patrilineal culture leads to a high level of endogamy and patrilocal practice (Utomo, 2016).

Similar to most Asian-cultured countries, financial transfers from children to parents, as well as co-residency, are a common practice for Indonesians (Frankenberg and Kuhn, 2004). After marriage, children choose to live with either set of their parents to provide financial support. However, unlike in South Asia, these types of parental support are not specifically assigned to a particular gender or birth cohort across ethnicities (Cameron and Cobb-Clark, 2008). For instance, in India, only the eldest male in the family must provide financial transfers to their parents. This extended family structure may also benefit the younger generations as it provides informal child-care(Witoelar, 2013; LaFave and Thomas, 2017; Cameron and Cobb-Clark, 2008; Halim et al., 2017). The presence of informal childcare as part of residency provides employment opportunities. The living arrangements discussed above are particularly common in rural areas and related to an incomplete market that fails to provide pensions, and child care is cited to be the main reason. This within-family support is not limited to co-resident family members but also the extended family (LaFave and Thomas, 2017).

Despite government promotion of the traditional values on women's positions, female LFP significantly increased between 1965 and 1980 (Manning, 1998; Robinson, 2008). Anthropological and sociological studies (Wieringa, 2003; Curnow, 2007; Robinson, 2008) commonly suggest that the government played an active role in shaping women's role in society. They argue that during the early decades of the Soeharto era (in the 1960s to

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[3]The number of ethnicity groups refers to 1,331 unique ethnic codes available in Indonesia's Population Census of 2010. In the official report of The Population Census 2010, the tabulation of ethnicities is aggregated into 31 broad categories of major ethnic groups (Utomo, 2016)

[4]As measured by the ethnic fractionalization F-index. At the national level, the F-index is measured at 0.81, while at the village level, F-index is measured at 0.07 on average.

[5]These three largest ethnic groups cover about 60% of the total population (Utomo, 2016).

1980s, which was also known as The Old Order – *Orde Lama*), the central government actively promoted what was called 'Kodrat Wanita' (women's destiny) ideology. The idea was based on biological determinism that highlights the role of women in economic development centring around supporting their husbands and children (Wieringa, 2003). The core value of the idea of 'Kodrat' is closely related to the Islamic interpretation of the roles of husband and wife. This concept of women's role in society is implicitly embedded in the Marriage Act of 1974, which emphasises a wife as a 'housewife' who shall manage the household to the best of her ability. It is believed that the reason the government was actively involved in promoting the traditional value of women's position in society was to counter communist influence. In the 1960s there were strong ties between the feminist movements and the communist party.

Overall, the interaction between Muslim culture and dominant patrilineal kinship is associated with the fact that society in general perceives the traditional gender role of women. Over time, the change in social norms has been evident though slow-moving. The World Values Survey (2019) asks whether respondents agree on 'when jobs are scarce men should have more right to a job than women'. Overall, around 76% of Indonesian interviewees agree with the statement, while the ratio for men is 77% and for women it is 74%. However, if we examine the answer by birth cohorts it is clear that at least among women the gender norms towards female employment have evolved. Figure 1 plots the results. About 69% of women born before 1995 agree with the statement, 73% of those born between 1965 and 1995, and 81% of older cohorts have the same opinion. This result provides indicative evidence of slow-moving gender norms shifting towards a more liberal view. Among male survey participants, however, such a shift has not been observed. In addition, the survey reveals that respondents regard gender gap issues and gender discrimination as less important issues compared to other social problems such as poverty, poor sanitation, inadequate education, and environmental issues.

3   Estimation strategy

I start by estimating the cross-sectional linear relationship between daughters' participation in adulthood and their mother's labour force participation in the daughter's childhood as follows.

$$DLFP_{i,j} = \beta_0 + \beta_1 MLFP_{i,j} + \beta_2 X'_{i,j} + \beta_3 Z'_{i,j} + \gamma_j + \epsilon_{i,j} \tag{1}$$

where $DLFP$ is the outcome variable that measures whether daughter i, living in province j, participated in the labour market in her adulthood or not; $MLFP$ is a dummy variable

Figure 1: Perceptions of gender roles, World Values Survey 2019

Jobs scarce: Men should have more right to a job than women
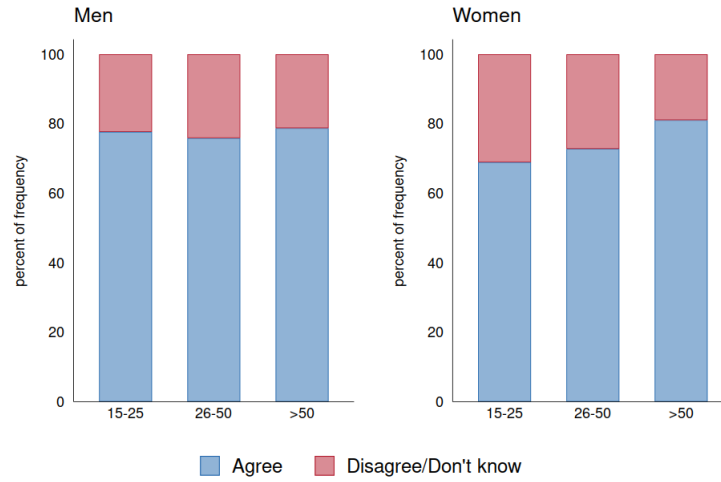
Source: Author's calculation based on World Values Survey 2019

that assigns one if the mother of daughter *i* participated in the labour market at the time of the daughter's childhood; X_i and Z_i, respectively, are vectors of daughter's characteristics and her parents' characteristics; γ_j is provincial fixed effects and $\epsilon_{i,j}$ represents the error term. Assuming the covariates capture important confounding factors to the daughter's labour force participation, the coefficient β_1 represents the intergenerational link of labour force participation. This baseline specification is similar, in spirit, to Fernández et al.'s (2004) strategy.[6]

The control variables included in vectors X_i and Z_i are similar to previous studies (Fernández et al., 2004; Morrill and Morrill, 2013). For daughters, in addition to age and years of schooling, I include a dummy variable of being a Muslim as religion is found to be correlated to certain gender attitudes (Chen and Ge, 2018). I also control for various daughter household characteristics, including the number of children aged 0 to 5, the total number of births, household per capita income and expenditure.[7] Further, I include a dummy variable indicating whether the daughter is the household head in her household and a dummy variable indicating if the daughter still lives with her mother.

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[6]They use the General Social Survey (GSS) dataset in the US, in which the questionnaire asks about the mother's employment status when an individual was 14 years old. They find that only mother-in-law employment status significantly affects women's participation whereas own-mother participation is statistically not different from zero. Morrill and Morrill (2013) extend the analysis using both GSS and the Female Labor Force Participation and Marital Instability (FLFPMI) survey, in which they find both mother-in-law and own mother's employment status matters. See also Chen and Ge (2018) for a more recent study using a similar strategy

[7]To control for household wealth (Galassi et al., 2019)

The vector Z_i includes the mother's and father's ages, years of schooling, and location of residence during the daughter's childhood. Provincial fixed effects are used to control for other time-invariant local labour market shocks. As part of the sensitivity tests, I drop provincial dummies to allow several provincial-specific covariates such as unemployment rate and female labour force participation, into the equation. I cluster the standard error at the mother's level to account for auto-correlation within the original family, as we have multiple daughters matched to a mother. Previous studies on intergenerational female labour force participation mainly focus on examining the correlation between mother-in-law and daughter-in-law (Fernández et al., 2004; Fogli and Veldkamp, 2011; Morrill and Morrill, 2013; Chen and Ge, 2018). Their findings of positive correlations suggest that perhaps parent-in-law characteristics could confound my estimate of β_1 through assortative mating channels. To deal with this issue, I also include additional control for the mother-in-law's employment status in one specification to test the robustness of my estimation.

The baseline specification of equation 2, however, may have an important attenuation bias. Fixing mothers' and daughters' labour participation timing at a single observation year, requires a strong assumption that their employment is relatively time-invariant. However, in reality, female labour force participation has strong life cycle patterns. Analogous to the issue of mismeasuring parents' and children's income using one data point instead of a lifetime or permanent income in intergenerational income mobility analysis,[8] mismeasured employment can also leads to downward attenuation bias (Chadwick and Solon, 2002; Mazumder, 2005; Black et al., 2011). Thus, in addition to the cross-section regression of equation 1, I also estimate an alternative specification that employs the 'permanent component' of employment, instead of one-time employment, following an idea from the income mobility literature.

Following (Chadwick and Solon, 2002) and (Zimmerman, 1992), I use a two-step estimation procedure. First I estimate equations that allow me to predict the mother's (daughter's) permanent component of employment from the observed working history of mother's (daughter's) in the dataset. The basic idea is to consider the employment of each parent and their offspring generation as a function of at least four components. The first is the year component which relates to every time-varying effect on employment. The second is the time-varying component that relates to individuals' employment, such as age or work experience. The third one is measurement errors. The last component is the permanent component that is unique to each individual. We assume that this permanent component reflects individual-specific lifetime employment probability. Thus, my second approach is to estimate the relationship between permanent components of the daughter's and the

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[8]this has been extensively discussed in intergenerational mobility literature, see Black et al. (2011).

mother's employment. More specifically, I first estimate the following equation for daughters and mothers separately:

$$Work_{i,c,t} = \delta_0 + \delta_1 age_{i,c,t} + \delta_2 age_{i,t}^2 + \gamma_i + \tau_t + \epsilon_{i,c,t} \tag{2}$$

where $Work_{i,c,t}$ is a dummy variable indicating employment status (employed or not) of individual i of birth-cohort $c \in \{30s, ..., 70s\}$ at year t. As control variables, I include age and an age-squared term to capture the life cycle effect of employment, and year fixed effects to capture time-varying economic and other factors which may affect employment. Finally, I control for the individual fixed effects, γ_i. The coefficients from individual fixed effects are then used as the measure of lifetime employment of the individuals (Chadwick and Solon, 2002; Zimmerman, 1992).

To estimate equation 2 a panel data set is required for both mothers and daughters. The data I am using, from the Indonesia Family Life Survey (IFLS), provides individual working history information and I use them to construct my panel data set. Details of how the panel is constructed will be discussed in the next section.

Unlike previous studies that estimate equation 2 separately for parent and offspring generations, I estimate it by groups of birth cohorts. Doing so allows me to take into account that, over time, there has been a sizeable shift in the life cycle profile of female labour force participation in Indonesia (Schaner and Das, 2016; Cameron et al., 2018). I divide my sample into six cohort groups: those born in the 1930s and 1940s, and then the remaining sample by each decade from the 1950s to the 1990s.

The coefficients on individual fixed effects obtained from these regressions are then used in equation 1 to replace the dependent variable of daughters' labour force participation (LFP), $DLFP_{i,j}$, and the most important independent variable, $MLFP_{i,j}$, mothers' LFP. Thus, we estimate how much the daughter's permanent LFP behaviour is associated with her mother's labour force participation behaviour. Since our main independent variable (MLFP) now comes from estimated regressors, which may not satisfy the classical error distribution assumption, I bootstrap my standard errors following Efron (1992) and (Poi, 2004).

Having resolved the measurement issue of mothers' and daughters' lifetime employment probability, there remains another potential bias in the estimation of β_1. Despite the rich array of control variables included, the estimate may still suffer from an omitted variable bias problem. To gauge this potential bias I follow Oster's (2019) procedures to detect the size of omitted variable bias to my estimated coefficients. I will discuss the detailed method and results in Section 7.

4 Data

4.1 Indonesia Family Life Survey

In this study, I used the Indonesia Family Life Survey (IFLS). The IFLS is an ongoing longitudinal household survey conducted by the RAND Corporation.[9] The sample frame of the survey covers 83% of the total population of Indonesia in 1993.[10] The survey was conducted in 13 out of 27 provinces, across 306 rural and urban communities.[11] The first round of the survey (IFLS1), was conducted in 1993. It consists of 33,081 individuals from 7,224 households. Since then, four follow-up rounds of the survey have been conducted in 1997 (IFLS2), 2000 (IFLS3), 2007 (IFLS4) and 2014 (IFLS5).[12][13] From the second round onward, the survey followed both the original households as well as their split-off households. As a consequence, the number of surveyed households grew to 16,931 in IFLS5. The IFLS has relatively high re-contact rates. As an illustration, in the latest round of IFLS5, the survey successfully re-contacted 82% of IFLS1 main respondents (Strauss et al., 2016).[14]

The IFLS follow-up surveys require enumerators to track and survey all members of the original households in the following rounds, including the split-off households as long as they remain living within the 13 original survey provinces. Figure 2 illustrates this special structure of the follow-up surveys. The orange rectangular blocks indicate households and the blue connecting lines represent direct family relationships. People within the rectangular blocks live at the same address. As can be seen in the original wave (left panel), there was one household with a couple and their children (a son and a daughter). In the follow-up wave, both children from the original household were married out. Hence, two additional households are being captured in the survey. In the additional families, the daughter-in-law and son-in-law are new members from outside the original survey households. Hereafter, I call the partners of the children of the original households the joiners. The joiners' parent households are not directly captured in the IFLS survey. We do, however, observe some demographic information regarding joiners' parents from the joiners'

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[9]The full dataset is publicly accessible at https://www.rand.org

[10]To preserve national-level representativeness, the IFLS follows the sampling frame of the annual national socio-economic survey (SUSENAS) in 1993.

[11]A community is defined as a geographical locality with the size similar to the sub-district administrative level

[12]A special round, namely IFLS2+, was conducted in 1998 following the needs to assess the impact of the Asian Financial Crisis.

[13]It is important to note that due to the time constraint, some households were surveyed not exactly in the survey year but in the early of the following year. For instance, in IFLS4, around 30% of the respondents were surveyed in early 2008 rather than 2007. This applies to any other survey except for IFLS1.

[14]The IFLS manages to re-contact, on average, more than 90% of respondents between consecutive rounds. As mentioned by LaFave and Thomas (2017), IFLS re-contact rate is impressive compared to, for example, Panel Study of Income Dynamics in the US where after 15 years, only about 50% samples can be re-surveyed.

Figure 2: Sample construction in IFLS
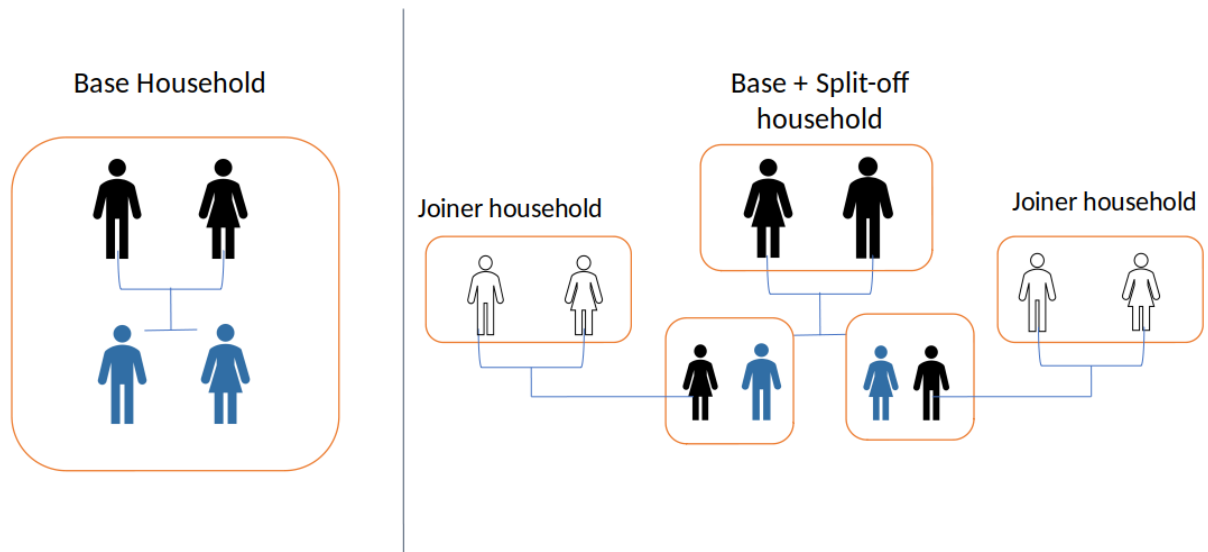
self-reported information if the joiner is deemed to be the household head since IFLS2.

Previous works on intergenerational links in female labour participation have mainly focused on establishing mother-in-law and daughter-in-law relationships (Fernández et al., 2004; Fogli and Veldkamp, 2011; Morrill and Morrill, 2013; Chen and Ge, 2018). Therefore, they only use observations of married women in their studies. In their specification, instead of their own parents' characteristics, they use in-law's characteristics as covariates. To present a comparable result, I provide a separate estimation of equation 1 for married daughters only in the sensitivity tests. For this estimation, I add additional covariates of spouse characteristics. This includes the spouse's income, the spouse's year of schooling, and the spouse's religion.

This study also differs from Fernández et al. (2004) in defining the mother's labour force participation. While Fernández et al. (2004) rely on the daughters' information on their mother's employment status, I use actual data on the mother's employment. This reduces potential measurement errors. My study also differs from Fernández et al. (2004), since I allow for variation in terms of mothers' employment timing. This is given by the age variation in daughters' observations. Hence, my specification captures the heterogeneity of exposure timing of the mother's employment. Nevertheless, as mentioned in the previous section, it is possible to set up an approach analogous to that of Fernández et al. (2004) using the availability of a non-household member module in the IFLS. I will present the results using the daughters' retrospective information as part of my sensitivity tests.

The IFLS survey has a rich array of socioeconomic information on households and indi-

viduals, including demographics, education, labour market outcomes, household income, expenditure, and within-household decision-making details. The key demographic characteristics gathered in the IFLS include age, education,[15] religion, urban or rural locality and migration status among many other variables. As for the labour market outcomes, the survey provides detailed information on types of main activities in the past week, value and source of income (either salary or wage), type of employment and work history in the past five years in each survey round. At the household level, in addition to typical information such as household size, expenditures and incomes, an important feature of IFLS is the availability of a household's decision-making module since IFLS2. This module allows me to construct a proxy of household bargaining power of the daughter (mother) in their respective household. I will discuss this module more in the next section. Lastly, the IFLS also provides a community-level module that requires community leaders to inform about public facilities as well as local norms and customs regarding a few social issues, such as marriage, funerals, and household decision-making practices.

The objective of this study is to link the behaviour of the daughters with that of their mothers. The IFLS allows me not only to observe the household characteristics of the daughter's original household but also the daughter's household once she gets married. Accordingly, I observe labour market outcomes and other individual characteristics of both the daughter and mother. The research also captures the household decision-making process in both the original and split-off households, which I use to investigate whether daughters' household decision-making behaviour resembles their mother's behaviour.

One important feature of the IFLS that needs to be mentioned here is that each wave of the survey includes a working history module, which asks about individuals' past employment status in the past five to seven years, depending on inter-wave year gaps. I use this module to construct unbalanced panel data from 1988 to 2014, which are used to estimate equation 2 to generate individuals' permanent employment probability. It is important to note, however, that in this module, instead of information on labour force participation, the survey asks whether the respondents were working or not in the years leading up to the survey year. As a consequence, I am unable to differentiate between people who were unemployed due to looking for a job or simply out of the labour force.

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[15]The IFLS provides detailed information on the highest education level attended and completed. This allows me to retrieve a precise number of years of schooling, whereas most socio-economic surveys rely on the highest education certificate obtained to estimate years of schooling.

4.2   Sample construction

I start with collecting daughters' observations in IFLS1. I define a daughter as an individual who is reported to be a daughter of the household head or his/her spouse in the survey. Consequently, orphans are not included. This gives me 7,322 daughters observations, which includes both biological and adopted daughters.[16] My study requires the daughter and mother to live in the same household at the baseline year to guarantee that the daughters directly observe their mother's behaviour. I therefore, exclude those who were not living with their mother in the same household at the time of the survey; this includes daughters who lived in single fathers' households as well as those who were married out. This restriction excludes 243 observations and leaves me with 7,079 daughter-mother pairs. Note that this match allows multiple daughters to be matched with one mother as long as they co-resided.

Next, since my study focuses on gender value internalisation during childhood and adolescence, I restrict my sample to be aged 2 to 19 years old in 1993. This brings my observation to 5,386 daughter-mother pairs. I then also exclude 111 daughters who had already married due to concerns that those who married in their teens may possess some unobservables. Later in the robustness check, I add them back in to examine the sensitivity of excluding these observations. Of the 5,275 daughters, 4,863 can be tracked in the IFLS5 wave.[17] As for the attrited daughters, the majority of them had moved out to a new household, relocated outside survey coverage, or died before the IFLS5 was conducted.[18] Of the 4,863 daughters, my final exclusion is 23 observations who were still in school at the time of the 2014 survey. Thus, my final analysis sample is 4,840 daughter-mother pairs.

Among the sample restriction rules, restricting the daughter's age to be between 2 and 19 years deserves more discussion. The reason for excluding daughters that are younger than 2 years old is to exclude the period during which the mother might still be on maternity leave. An event study of childbirth and probability of work by Halim et al. (2017), also using the IFLS dataset, suggests that women in Indonesia become 15% less likely to work a year before childbirth and start to return to the labour force two years after. At the same time, I restrict daughters to be in their teens to ensure that their daughter is in

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[16]Adopted daughters observations accounted for only about 1.2 percent of total daughter respondents in the IFLS1

[17]The final 4,863 observations include those who were not present at the time of the 2014 survey but are still listed as successfully re-interviewed if the household's main respondent can give information. However, these observations did not appear in more detailed questionnaires such as cognitive and health modules.

[18]Overall, total IFLS1 household members, which is 33,081 individuals, about one-third still live in the same household, 26 percent live somewhere else (but still re-interviewed) and 14 percent had died (by the fourth wave) in the IFLS5. This brings the re-contact rate, including the deaths, between IFLS5 and IFLS1 to about 76 percent (Strauss et al., 2016). Recall that the re-contact procedure of IFLS excludes re-surveying original household members who live outside the 13 original provinces.

their crucial developmental stage so that the mother's behaviour could influence her. A psychological study suggests that the social norms internalization process could start very early in childhood, peak between 13 and 15 years old, and continue through the adolescent period (Chandler and Connell, 1987).[19] Nonetheless, later in the result and sensitivity test section, I will show the estimation results considering different choices of age restrictions.

I acknowledge that there are several alternatives to constructing the analysis samples regarding previous studies. First, as employed by Galassi et al. (2019), one could link the group of daughters and group of mothers in the survey and observe both group's employment when they were aged 25 to 45 years old.[20] The main benefit to following this approach is that we measure the probability of the mother working at the same age profile as the daughters. However, this approach neglects my concerns about whether daughters are exposed to employment during their childhood and adolescence. Nevertheless, my approach deals with the life cycle of employment issues by using permanent component employment of mothers as shown in Section 3.

The other alternative is to start with a pool of daughters aged 2–19 years old and link to their employment in each wave of IFLS whenever they were found in their adulthood. This would potentially reduce attrition problems, compared to my approach which relied on one wave of observation. Under this approach, however, I am likely to observe daughters' employment in multiple waves at different ages for older daughters from the baseline pool. I present the results following this method as part of a sensitivity test.

Lastly, I could use the self-reported information on mothers' activities in the past, which is similar to the studies of Fernández et al. (2004); Morrill and Morrill (2013) and Chen and Ge (2018). From IFLS2 onwards, this approach is possible as the survey asked about parents' information on adult samples (both original and joiners) who did not co-reside within the household. The main benefit of this approach is to allow me to have a larger sample size since I also include information from the joiners. However, mother employment information would likely suffer from recall errors, hence increased measurement error. For the joiners, I could not verify whether daughters co-reside with their mother when the daughter grows up. Thus, I argue that my sample construction approach preserves as good as, if not better, an identification that fits my study purpose over other alternative approaches.

The second alternative approach is to use the self-reported information on the mother's activities in the past, which is similar to the studies of Fernández et al. (2004); Morrill and Morrill (2013) and Chen and Ge (2018). From IFLS2 onwards, this approach is possible as

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[19]Some studies suggest ages 13–16 years old as the peak period of values internalisation. In regards to this, in the results section, I present my results in several age bracket definitions.

[20]Their study uses the NLSY79 survey which is a longitudinal project that follows the lives of a sample of American youth born between 1957–64. Later on, the project complemented the study by surveying the children of this study cohort. Further information on the NLSY79 dataset is available at https://www.bls.gov/nls/

the survey asked about parents' information on adult samples (both original and joiners) who did not co-reside within the household. Similar to previous alternative approaches, the only benefit of this approach is to allow me to have a larger sample size. I do not prefer this approach given similar potential issues as the first alternative approach mentioned earlier. In particular, it becomes less possible to verify whether daughters co-reside with their mother when the daughter grows up since there is no additional information from the survey on how much each individual spent time with their mother. Mother employment information is also likely to suffer from recall errors. Thus, I argue that my sample construction approach preserves as good as, if not better, an identification that fits my study purpose over other alternative approaches.

Finally, the permanent component approach, as detailed in Section 3, demands observation of a complete working history in the survey. Thus, those daughters who do not currently live in the household or failed to be surveyed will be dropped from the observation for this approach. There are 2,734 daughters of 4,840 from the baseline sample pool that qualify for these restrictions. Comparing 2,734 with their attrited counterparts, I find that they are more educated by half a year of schooling, ten percent more likely to work in 2014, less likely to be married and have more educated parents. These characteristics correlated positively with individuals' likelihood of participating in the labour market. Hence, the permanent component approach results potentially overestimate the intergenerational link. I will discuss the consequences of the interpretation of the results in more detail in Section 5.

4.3   Summary Statistics

Summary statistics of the main variables used in this study are reported in Table 1. Panel A of Table 1 reports mothers' profiles in 1993 (IFLS1 round); Panel B presents their characteristics in 1993 (IFLS1 round); and Panel C shows daughters' characteristics in 2014 (IFLS5 round).

The 4,840 daughters in my analysis sample belong to 3085 mothers. This implies that at least one-third of daughter observations shared a mother from the same household. In 1993, mothers were on average 36.6 years of age, with a little less than 3 years of schooling. The father's mean age was 42 with 3.4 years of schooling. Around 44% of the sample, households were living in urban areas. In that year, our sample daughters were about 10 years of age, around 52% of them were at school and their average (incomplete schooling years) was 3 years.

By 2014, the daughter samples were on average aged 31, ranging from 23 to 40, and they had completed slightly more than 7 years of schooling. About 83 percent of them were mar-

ried. Relative to their mothers in 1993, this sample is younger and more educated. About 56 percent of daughters were then living in urban areas. At the baseline, however, only about 44 percent of their families lived in urban areas. This potentially indicates that about 12 percent of daughters migrated from rural to urban areas. About a 40% of the daughters were still living in their original household in 1993.[21] 86% of the sample are Muslims and 71% have children of 0–5 years of age. Just above 10% of the daughters were household heads. The daughter's household has an average monthly income of IDR 828 thousand, however, the standard deviation is very high. On average, household monthly expenditure is slightly higher than average income by about IDR 300 thousand. The discrepancy between income and expenditure may indicate that income may be under-reported.

The main outcome and treatment variable of my analysis is mothers' and daughters' labour force participation. In this paper, I define someone to be participating in the labour market if her main activity in the past week was either working, temporarily not working, or looking for a job. The IFLS provides a consistent measure of labour force participation across waves. In 1993, around 46% of the mothers participated in the labour market, which is almost the same as their daughter's labour force participation rate in 2014. About 47.8 percent of daughters participated in the labour market in 2014. This participation rate is slightly lower than overall female labour force participation of the SAKERNAS dataset[22] given the same birth cohort, which was around 50 percent.[23]

I find significant differences between urban and rural women on several individual characteristics, for both mother and daughter samples (see Table A1 in Appendix A). First, in terms of participation rate, urban daughters have a slightly higher participation rate compared to rural daughters. This may correlate with the fact that urban daughters were more educated or had better employment availability Schaner and Das (2016) compared to their counterparts in rural areas. In terms of marriage, daughters in rural areas were found to be 7 percentage points more likely to be married. This may relate to the fact that urban women are more likely to delay marriage as discussed by Jones (2017). In terms of childbearing, daughters in rural areas had more children compared to those in urban areas. As for mother characteristics, I find striking differences in terms of labour force participation. About 54% of rural mothers participated in the labour force in 1993 while

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[21]I define the requirement to stay in the same original household if the household ID of the daughter was unchanged between IFLS1 and IFLS5.

[22]SAKERNAS is the annual labour market survey in Indonesia collected by Statistics Indonesia. It surveys sample representatives at the district level. SAKERNAS is the main source of official labour market statistics in Indonesia.

[23]This may raise a concern about how well the IFLS represents labour market outcomes in Indonesia. Regarding this issue, Dong (2016) investigates the consistency between the IFLS and SAKERNAS for analysing labour market outcomes. She found that the magnitudes of the estimates of the labour force participation determinant model are similar between the two datasets.

Table 1: Summary statistics

| | Statistics | | | |
| | Mean | S.D. | Min | Max |
	(1)	(2)	(3)	(4)
Panel A. Daughter's profile in 2014				
Daughter's LFP in 2014	0.476	0.499	0.0	1.0
Lives in urban in 2014	0.564	0.496	0.0	1.0
Daughter's year of schooling in 2014	7.040	4.324	0.0	18.0
Daughter's age in 2014	31.027	4.778	23.0	40.0
Daughter's married in 2014	0.822	0.382	0.0	1.0
Muslim	0.861	0.346	0.0	1.0
Live with mother (=1) in 2014	0.941	0.236	0.0	1.0
HH member aged 0-5 in 1993	0.712	0.790	0.0	4.0
Household member aged 6-15 in 2014	0.855	1.000	0.0	8.0
Female household head in 2014	0.108	0.311	0.0	1.0
(Log) Household income (0000's IDR)	82841.887	2.87e+06	0.0	1.0e+08
(Log) Household exp (0000's IDR)	110.155	98.646	0.0	2276.3
Panel B. Daughter's profile in 1993				
Daughter's LFP in 1993	0.005	0.073	0.0	1.0
Live in urban	0.443	0.497	0.0	1.0
Year of schooling in 1993	3.004	3.299	0.0	14.0
Age in 1993	10.027	4.778	2.0	19.0
Observations	4863			
Panel C. Mother's profile in 1993				
Mother's LFP in 1993	0.462	0.499	0.0	1.0
Mother's years of schooling in 1993	2.905	3.379	0.0	15.0
Mother's age at 1993	36.587	9.010	15.0	99.0
Father's age	41.790	9.968	18.0	92.0
Father's years of schooling in 1993	3.381	3.878	0.0	16.0
Observations	3085			

Source IFLS1 and IFLS5. The sample are unmarried daughters, who lived with their mother and are aged 2-19 years old.

the rate for their urban counterparts was only 40.2%. This is consistent with the fact that rural areas are highly engaged in agricultural activity. I consider the urban-rural disparity as part of heterogeneity results.

5 Results

5.1 Baseline results

In this section, I present the cross-sectional intergenerational correlation between the mother's LFP in 1993 and the daughter's LFP in 2014 in Indonesia. Table 2 summarises the estimated marginal effects of the mother's LFP on the daughter's LFP and the coefficients of the covariates that correspond to equation 1. The table is structured as follows. Each

column of Table 2 represents a separate regression. The first column presents the unconditional intergenerational correlation between mother and daughter's LFP. The second column documents the estimated intergenerational correlation after controlling for covariates such as daughter's characteristics, own-mother characteristics and household characteristics. Finally, the third column depicts the estimated intergenerational correlation further controlling for covariates and a set of the current daughter's residential province fixed effects. The estimated coefficient is clustered at the mother level to account for potential error correlation among multiple daughters paired with a mother.

The first column in Table 2 shows that the unconditional intergenerational correlation between the mother's LFP and the daughter's LFP is 0.063. In other words, if the mother participated in the labour force in 1993, on average, the daughter's likelihood of participating in the labour force increased by 6.3% in 2014. Adding more individual and household characteristics of mothers and daughters in column 2 reduces the correlation to 0.051. Finally, after adding provincial fixed effects, which aimed to take into account local labour demand factors and other region-specific factors, the intergenerational correlation reduced to 0.037. Overall, the results provide evidence that a mother's employment in the past is positively and statistically significantly associated with her daughter's employment in the future. The results from columns 2 and 3 also highlight the importance of considering other possible confounding factors to daughters' labour market decisions as well as local labour demand factors when examining intergenerational correlation. Adding additional controls substantially reduced the correlation.

I consider the size of the intergenerational correlation as economically meaningful. In comparison to other individual characteristics, the magnitude of the intergenerational correlation coefficient is about two additional years of education (0.018). Marriage status and whether a daughter still lives in the same household as the mother are the only two covariates that have greater coefficients than the mother's LFP. Considering that in Indonesia female LFP has not increased in 20 years, a potential increase of 3.7% in female labour force participation over a generation, given mother's participation, is non-trivial.

Columns 2 and 3 of Table 2 show that the mother's age in 1993, daughter's education, daughter's age, living with mother, log of household income and household per capita expenditure are characteristics that correlate positively to the daughter's decision to participate in the labour market. Meanwhile, being married, having children less than 5 years old and living in a rural area are factors that are statistically significantly and negatively correlated with the daughter's probability of employment. My results are similar to those found in Cameron et al. (2018) which suggest that about 20% of women opt out of the labour force once they get married. One interesting result from the estimation in Table 2 is a large

positive effect of living in the same household as one's mother on the decision to participate in the labour market. This may hint to us that the role of informal child-care support is important for the female labour supply. Living with my mother increases such support. This relates to a collection of studies that find a positive association between elderly presence in households and female labour supply (Ettner, 1995; Pezzin and Schone, 1999; Liao and Paweenawat, 2020). In addition, from cultural and institutional perspectives, staying with the mother may also point to a possibility of matrilineal kinship practice. Some empirical evidence as summarised in Landmann et al. (2018) finds that patrilocality, which is rooted in patrilineal culture in general, has negative associations with female labour supply.

One interesting finding is related to income. I find that women's labour supply is positively related to the income of the household head. In general, the variable 'household head income' is used to capture the unearned income effect. The theory of labour supply suggests that the income effect on labour supply should be negative but I observe a positive effect. This could be because household head income is not an exogenous measure of unearned income. For example, the assortative mating channel could imply that the earning potential of the spouse (the woman) would also be high, hence, it captures some substitution effects.

5.2   Permanent component approach

The previous section relies on daughters' and mothers' labour force participation at one point in time. However, women's labour force participation is heavily related to their marriage and childbearing situations and hence is very sensitive to their life cycle. Using data from one point in time assumes such a life cycle effect. To mitigate this problem, in this section, I adapt the permanent component approach used by Chadwick and Solon (2002) and Galassi et al. (2019), as discussed in Section 3.[24]

Table 3 summarises the results similarly as in Table 2. The dependent variable is now the daughter's predicted lifetime employment and my main independent variable of interest is the mother's predicted lifetime employment. I use the same set of covariates as in the estimation discussed in Table 2. It is important to note that due to data limitations, only slightly more than half of the total sample used in Table 2 estimation has information that allows me to predict mothers' and daughters' lifetime participation. Thus, to ensure that the results using current and lifetime participation are comparable, I present the estimated result from both estimations using the same sample in Table 4.

Column 1 of Table 3 shows that the unconditional intergenerational correlation, using

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[24]As discussed in Section 3, it is important to note that due to data availability, I construct the permanent components in terms of whether mother (daughter) was employed instead of participating in the labour force.

Table 2: Mother-daughter LFP intergenerational link - baseline regression

	Daughter's LFP in 2014		
	(1)	(2)	(3)
Mother's LFP in 1993	0.063***	0.049***	0.038**
	(0.015)	(0.016)	(0.016)
Mother's year of schooling in 1993		0.002	0.005*
		(0.003)	(0.003)
Father's year of schooling		-0.002	-0.002
		(0.002)	(0.002)
Mother's age at 1993		0.003**	0.003***
		(0.001)	(0.001)
Lives in urban in 2014		-0.029*	-0.040**
		(0.017)	(0.018)
Daughter's year of schooling in 2014		0.018***	0.018***
		(0.002)	(0.002)
Daughter's age in 2014		0.006***	0.007***
		(0.002)	(0.002)
Daughter's married in 2014		-0.211***	-0.213***
		(0.020)	(0.020)
Muslim		0.002	0.027
		(0.024)	(0.027)
Live with mother (=1) in 2014		0.261***	0.251***
		(0.034)	(0.034)
Both daughter & mother work in farm		-0.017	-0.015
		(0.020)	(0.020)
Household members aged 0-5 in 2014		-0.021*	-0.019
		(0.012)	(0.012)
Household members aged 6-15 in 2014		0.002	0.007
		(0.008)	(0.008)
Female household head in 2014		-0.018	-0.032
		(0.025)	(0.024)
Household head income in 2014		0.008***	0.007***
		(0.002)	(0.002)
Household per capita expenditure in 2014		0.011**	0.013**
		(0.005)	(0.005)
Constant	0.446***	-0.248***	-0.313***
	(0.010)	(0.091)	(0.095)
N	4,863	4,560	4,560
Mean	0.476	0.475	0.475
Adj. R2	0.004	0.069	0.085
Prov F.E.	no	no	yes
Cluster S.E	yes	yes	yes

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993) who can be tracked in IFLS5 (2014). The dependent variable is the daughter's labour force participation in IFLS5 (2014). We restrict the sample to be between 2-19 years old and unmarried in 1993.

Table 3: Mother-daughter's intergenerational link of lifetime employment

| | Daughter's lifetime employment | | |
	(1)	(2)	(3)
Mother lifetime employment	0.121***	0.103***	0.090***
	(0.017)	(0.018)	(0.019)
Mother's year of schooling in 1993		-0.001	0.001
		(0.002)	(0.002)
Father's year of schooling		-0.003	-0.003*
		(0.002)	(0.002)
Mother's age at 1993		0.001	0.001
		(0.001)	(0.001)
Lives in urban in 2014		-0.008	-0.018
		(0.013)	(0.013)
Daughter's year of schooling in 2014		0.001	0.000
		(0.002)	(0.002)
Daughter's age in 2014		-0.001	-0.001
		(0.002)	(0.001)
Daughter's married in 2014		-0.007	-0.010
		(0.025)	(0.025)
Muslim		-0.108***	-0.093***
		(0.018)	(0.024)
Live with mother (=1) in 2014		-0.006	-0.007
		(0.047)	(0.043)
Both daughter & mother work in farm		0.021	0.018
		(0.015)	(0.016)
Household members aged 0-5 in 2014		0.001	-0.001
		(0.009)	(0.009)
Household member aged 6-15 in 2014		-0.021***	-0.019***
		(0.006)	(0.006)
Female household head in 2014		0.037*	0.030
		(0.020)	(0.020)
Household head income in 2014		0.006***	0.005**
		(0.002)	(0.002)
Household per capita expenditure in 2014		0.000	0.001
		(0.005)	(0.005)
Constant	0.014**	0.017	0.019
	(0.006)	(0.098)	(0.101)
N	2,734	2,576	2,576
Mean	0.015	0.013	0.013
Adj. R2	0.020	0.038	0.051

Standard errors are clustered at the mother's level in parentheses. * $p <0.10$, ** $p <0.05$, *** $p <0.01$. The sample is drawn from mother and daughter pairs in IFLS1 (1993). The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993.

Table 4: Mother-daughter's intergenerational link of lifetime employment

	Daughter's lifetime employment		
	(1)	(2)	(3)
Mother's LFP in 1993	0.079***	0.057***	0.041**
	(0.020)	(0.021)	(0.021)
N	2,734	2,576	2,576
Mean	0.431	0.427	0.427
Adj. R2	0.006	0.045	0.066

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993) who can be tracked in IFLS5 (2014). The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993.

the permanent component approach, is 0.121. After controlling for covariates and provincial fixed effects, the intergenerational correlation, in column 3 is now 0.098 as opposed to 0.04 in column 3 of Table 4. This level of the estimated coefficient is very close to Galassi et al. (2019)'s findings of 0.11 for the U.S. in which they also use a similar approach using US data. In terms of interpretation, now the results suggest that an increase in maternal employment probability by 1 percent, increases the employment probability of her daughter by 0.098 percent on average. In other words, the probability of someone being employed during her lifetime is higher by 9.8% if she had an ever-employed mother compared to her peer who had a never-employed mother.

As we can see from Table 3 column 3, using the lifetime employment variables, I find that the intergenerational link is more than double compared to our baseline results in Table 2 column 3. A stronger association between mother and daughter's participation, in comparison to the results using cross-sectional participation information, offers important insight concerning previous studies. It indicates that the life cycle does matter in measuring employment. Relying only on a mother's employment at a certain stage of a daughter's life biases the estimated association coefficients toward zero. Fernández et al. (2004) and Chen and Ge (2018), for instance, use the mother's participation when the daughter was 15 years old,[25] finding a small, positive, yet not significant intergenerational link. This could easily relate to measurement bias. However, as mentioned in Section 4, this could also suggest that the permanent component approach overestimates the intergenerational link. This relates to the fact that attrited sample, due to working history availability, possess characteristics that are positively biased towards employment likelihood. Despite the potential bias, the estimated intergenerational correlation is precisely estimated and consistent with the baseline results.

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[25]Similarly, if the study uses the mother's employment during the daughter's childhood, such as Farre and Vella (2013).

To rely on either the observed mother's participation at a certain daughter's age or the mother's employment during childhood may mask the importance of temporary employment of mothers during stages of child observation. As women's employment is more prone to multiple interruptions, unlike that of men, a mother's employment at a daughter's certain age is likely to correlate with other time-related confounding factors that also relate to the mother's decision to participate in the labour market, for instance, child interruption. One can argue that, albeit temporary, mothers' employment may likely transmit role-model effects. In this case, it could lead to a positive association towards daughter participation. On the other hand, one may also argue that temporary work discourages daughters from participating in the labour market if observed temporary employment reveals the costly nature of working for women. My results, nevertheless, support the former argument.

5.3   Heterogeneity: urban and rural

Indonesia is known to have urban and rural disparities that lead to an important background in analysing economics(Smith et al., 2002; Alisjahbana and Manning, 2006; Suryahadi et al., 2009). There are at least three motivations, in our research context, one could expect that intergenerational correlation between those who were growing up in urban and rural localities may differ. First, in the labour market context, the literature (Schaner and Das, 2016; Cameron et al., 2018) shows that, in the past two decades, opposite trends emerged in rural and urban areas in terms of labour force participation over a generation. Second, previous studies on kinship norms and family values show that those raised in rural areas are likely to preserve such values compared to their counterparts raised in urban areas (Fischer, 1995). This factor could directly affect transmission, if role-model effects play an important role, as a plausible mechanism behind the intergenerational correlation. Third, if the intergenerational correlation is driven by occupation-specific human capital transfer, we could expect stronger intergenerational transmission in rural areas, as most jobs available are in agriculture, which does not change much over generations, compared to urban areas that have more sectoral dynamics.

In urban areas, younger cohorts have higher participation compared to their older counterparts, in their 20s. Meanwhile, in rural areas, younger cohorts (e.g. born in the 1980s) participate less in the labour market compared to their older counterparts (e.g. born in the 1950s) in their 20s. Cameron et al. (2018) argue that the opposite trend could be explained by the lack of jobs available in rural areas and increased education access for the younger generation. This fact could negatively bias estimated intergenerational correlation such that we might observe weaker intergenerational correlation in rural areas

than in urban areas. This weaker correlation is not driven by weaker intergenerational transmission but more by local labour market dynamics. As my estimation using the permanent component approach takes into account cohort effects, I expect that the estimated intergenerational correlation would not capture this possible job mismatch factor over a generation.

As I argue that the role-model effect matters, urban and rural differences may relate to rural areas adopting more traditional and practising tight family-knit relationships (Fischer, 1995). This may be associated with different cultural and norms practices. Family ties are stronger in rural communities as opposed to urban areas where family members could be more individualistic.

To investigate how this rural-urban disparity affects intergenerational correlation, I estimate equation 2 for urban and rural samples separately. This framework allows institutional settings to differently affect the socioeconomic aspects of each individual. I present the estimation results in Table 5. After controlling for individual and household characteristics, it emerges that intergenerational correlation does exist in both rural (see Column 1) and urban areas (see Column 2). However, it is clear that a stronger intergenerational link is found in rural areas compared to urban areas.

I argue that this is evidence of the hypothesis that there is stronger value internalisation for those who live in rural areas compared to urban areas. In other words, an individual who lives and is raised in urban areas possesses more individualistic traits. Consistent with the fact that education access to women has significantly increased in urban compared to rural areas in the past two decades (Schaner and Das, 2016), the effect of schooling on labour supply is found to be larger (not shown in the table) in urban areas compared to rural areas, which affects the magnitude of intergenerational correlation. The findings are also consistent with the specific human capital transfer hypothesis, where we observe stronger transmission in rural areas compared to urban areas. My results are indicative than conclusive, as this would be a potential future research avenue.

5.4   Other heterogeneity

Chen and Ge (2018) discuss the possible role of religion, which may affect female participation. Some religious beliefs may have similar cultural effects on labour force participation. As we know, female labour force participation is relatively much lower in Muslim countries, except for India, which is predominantly Hindu. One can hypothesise that being Muslim would strengthen the intergenerational link of female labour force participation since being Muslim affects both mother and daughter's decision to be less likely to participate in the labour market. To test this hypothesis, I modify equation 1 to add a dummy

Table 5: Mother-daughter's intergenerational link of lifetime employment by location

	Daughter's employment	
	(1)	(2)
	Rural	Urban
Panel A. No Control		
Mother lifetime employment	0.160***	0.091***
	(0.026)	(0.024)
N	1,579	1,155
Mean	0.022	0.006
Adj. R2	0.024	0.013
Covariates	no	no
Fixed effects	no	no
Cluster S.E.	yes	yes
Panel B. with Control		
Mother lifetime employment	0.136***	0.072***
	(0.028)	(0.025)
N	1,506	1,070
Mean	0.020	0.004
Adj. R2	0.043	0.031
Covariates	yes	yes
Fixed effects	no	no
Cluster S.E.	yes	yes
Panel C. with Control + Province FE		
Mother lifetime employment	0.124***	0.048*
	(0.030)	(0.026)
N	1,506	1,070
Mean	0.020	0.004
Adj. R2	0.063	0.050
Covariates	yes	yes
Fixed effects	yes	yes
Cluster S.E.	yes	yes

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). Sample restricted employed mother-daughter pairs. The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993. Regressions control for covariates including individual characteristics, mother characteristics, and daughter's household characteristics as presented in Table 2 except for the living in urban areas dummy variable.

of being Muslim and the interaction of being Muslim and labour force participation. It is important to note that around 90% of respondents were Muslims.

As summarised in Table 6 Panel A, I find that there is no systematic difference between Muslim and non-Muslim women in regards to the size of the intergenerational link. However, I do find that being a Muslim has a significant negative association with a daughter's own labour force participation. As mentioned in Section 2, social norms in Indonesia are a product of interaction between religion and rich indigenous cultures. Being non-Muslim is not necessarily cutting the tie between individuals and their ethnicity kinship practice for instance. Hence, comparing these results to findings in Islamic countries where Islamic values are embodied in the legal system may not be as surprising as one perceives.

While the type of religion is not relevant to intergenerational transmission, the exposure level to the religion or religiosity could be an important factor in determining the transmission of norms or values within the family. Previous literature has inconclusive findings about the relationship between religiosity and labour force participation. Some literature ties specific religions with higher labour force participation, such as Protestantism (Feldmann, 2007), or lower participation, such as Islam (Guiso et al., 2003). Previous literature such as Ahmed and Sen (2018) suggest that more females adopting a more conservative outlook, in this case, dressing as a Muslim in Bangladesh, will have a negative association with female labour force participation. In general, religious married women are associated with lower participation (Jaeger, 2010).

To test this hypothesis, I begin by presenting what the IFLS data tells us about respondents' perceptions of their religiosity. It is important to note that information on individual religiosity is available only in IFLS5. The survey reveals, as illustrated in Figure A2, that more than 70% of the sample identified themselves as religious. Since the question itself is very sensitive, it is expected to have low variation in terms of response. Similar to previous efforts, I then modify equation 1 by introducing a dummy variable that assigns a value of one if a daughter identified herself as very religious, as well as the interaction between the mother's participation and the daughter's religiosity.

As shown in Table 6 Panel B, I do find evidence indicating that more religious women preserve lesser intergenerational links compared to less religious people. However, one needs to interpret the results carefully. There are a couple of issues. First, it is hard to find the most precise measurement of religiosity as each religion might have different perceptions of being religious. Second, the nature of self-reported surveys makes it difficult to avoid measurement errors given the degree of sensitivity of the issue. However, as mentioned earlier, I tried to use different constructions of religiosity that accommodate the uniqueness of each religion, but still found a lack of evidence of religiosity matters. Third,

Table 6: Other heterogeneity results: mother-daughter's intergenerational link

| | Daughter's lifetime employment | | |
	(1)	(2)	(3)
Panel A. Religion			
Mother lifetime employment	0.094*	0.100*	0.091*
	(0.051)	(0.052)	(0.052)
mlifemuslim	0.022	0.009	0.011
	(0.054)	(0.055)	(0.055)
Muslim	-0.111***	-0.109***	-0.098***
	(0.018)	(0.018)	(0.023)
N	3,005	2,836	2,836
Mean	0.016	0.016	0.016
Adj. R2	0.032	0.038	0.048
$\beta\_1 + \beta\_2$	0.116	0.108	0.101
Covariates	no	yes	yes
Prov F.E.	no	no	yes
Cluster S.E	yes	yes	yes
Panel B. Religiosity			
Mother lifetime employment	0.107***	0.094***	0.083***
	(0.019)	(0.020)	(0.021)
Mother's work x Religious	0.052	0.058	0.058
	(0.035)	(0.036)	(0.036)
Religious	-0.001	-0.024*	-0.024*
	(0.012)	(0.013)	(0.013)
N	2,980	2,812	2,812
Mean	0.016	0.015	0.015
Adj. R2	0.019	0.041	0.053
$\beta\_1 + \beta\_2$	0.158	0.153	0.141
Covariates	no	yes	yes
Prov F.E.	no	no	yes
Cluster S.E	yes	yes	yes

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993.

as discussed by Bisin and Verdier (2001), religiosity is inherited from the previous generation so I likely have an endogeneity problem in estimating such effects. As we may not be able to precisely measure religiosity results due to the aforementioned issues, these results should be seen as suggestive.

6   Potential mechanisms

Existing literature (Morrill and Morrill, 2013; Nicoletti et al., 2018; Galassi et al., 2019) suggests at least four possible hypotheses to explain why we observe an intergenerational correlation between a mother and her daughter in labour supply decisions. First, a mother

may directly transmit a specific preference toward work to her daughter. Second, the inter-generational correlation could be driven by the transfer mechanism of occupation-specific human capital from mother to daughter. Third, both mother and daughter decisions are influenced by the level of participation of their peers in the community. Finally, a mother serves as a role model to her daughter.

6.1 Direct transmission of preferences towards work

A mother may directly transmit her preference toward work to her daughter. To test one preference of being at work requires information on how individuals prefer to be at work compared to other activities such as leisure or housework. The IFLS does not possess direct measures to elicit such preference information. Galassi et al. (2019) use the information on an individual's attitude towards gender roles[26] as an alternative proxy to construct a measure of disutility toward works. As an alternative, I use the information on job satisfaction collected in the last wave of the IFLS to construct the disutility of work proxy, with the procedure as follows.

First, I gather self-reported job satisfaction information from the labour market module where respondents were required to rank their level of satisfaction towards their current job scaling from 1 (very satisfied) to 4 (very dissatisfied).[27] I argue that this measure of job satisfaction could potentially reveal one's preference for work activity. I acknowledge, however, that there are at least three potential issues in utilising such information to proxy work preferences. First, satisfaction with a job is likely to be correlated with the type of employment that someone has; for instance, casual jobs may provide more time flexibility but less job security. Secondly, the level of satisfaction toward a job may come from monetary incentives rather than their utility towards work. Thirdly, preferences may change as one's career progresses (e.g, more experienced workers may value leisure more than the wage rate offered). Thus, I prefer to construct alternative disutility of work measures based on job satisfaction. To do so, first, I estimate the job satisfaction linearly conditional on age, type of working status (e.g. self-employed, casual, wage worker), income and years of schooling. I estimate this separately for mother and daughter samples. Next, I gather the residual terms, which I use as a proxy for 'disutility of work', which already addressed several concerns raised earlier. This measure of disutility of work is mean zero by construction and normally distributed. Higher values represent higher disutility toward work.

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[26]Women's place is in the home, not in the office or shop, women are much happier if they stay at home and take care of the children.

[27]The survey reveals that about 71% of respondents felt satisfied with their current job, 12% reported being very satisfied, 15% reported feeling dissatisfied and only 1.5% were very dissatisfied. Both mother and daughter samples share similar responses

Table 7: Preference towards work and mother-daugther's intergenerational link

	Daughter's employment (predicted)			
	(1)	(2)	(3)	(4)
Daughter disutility of work	-0.236***			
	(0.010)			
Mother disutility of work		-0.136***	0.040**	
		(0.013)	(0.017)	
Mother lifetime employment				0.091***
				(0.019)
High disutility of work				-0.032***
				(0.012)
N	2,943	3,966	4,560	2,576
Mean	0.015	0.013	0.015	0.013
Adj. R2	0.195	0.277	0.094	0.053

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). The dependent variable is the daughter's lifetime employment estimated from the linear prediction of panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from linear prediction of panel fixed effect model using working history module (see equation 2). We restrict sample to be between 2-19 years old and unmarried in 1993.

From Table 7 Columns 1 and 2, I find a negative correlation between the measure of disutility toward work and lifetime employment for both mother and daughter, as expected. I also find, as seen in Column 3, mother and daughter's disutility of work is significantly and positively associated. To test the direct transmission of work preferences to intergenerational correlation I perform the following procedures. First, I create an indicator variable with a value of one if the mother's (daughter's) disutility of work is less than the median of the disutility of work of the mothers (daughters) group. Then, I create a dummy variable that gathers mothers and daughters into the same groups based on highly disliked work preferences. To test the role of direct transmission of preference toward work, I estimate equation 1 with additional control variables of the high disutility of work. I find the disutility of work to be significantly and negatively correlated to lifetime employment as expected. However, I find the size of the intergenerational correlation (see Table 7 Column 3) does not change much compared to the baseline estimation (see Table 3). The results suggest that direct transmission of preferences toward work could not explain much intergenerational correlation between mother and daughter.

6.2 Occupation-specific human capital transfer

Parents may transfer occupation-specific human capital. In broad terms, this also includes networking. To test this hypothesis, I follow Galassi et al. (2019) by estimating equation 1

Table 8: Occupational-specific transfer and mother-daughter's intergenerational link

| | Daughter's lifetime employment | | |
	(1)	(2)	(3)
Mother lifetime empl (cohort)	0.056***	0.126*	0.90***
	(0.018)	(0.071)	(0.019)
N	2,407	327	2,576
Mean	-0.010	0.199	0.015
Adj. R2	0.044	0.025	0.041
Province fixed effect	yes	yes	yes
Covariates	yes	yes	yes
Mother-daughter employment	Different occupation	Same occupation	All

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). Sample restricted employed mother-daughter pairs. The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993. Regressions control for covariates including individual characteristics, mother characteristics, and daughter's household characteristics as presented in Table 2.

separately for those who work in the same occupation as the mother and those who work in different occupations, including a mother-daughter pair where either one of them is not working. In the IFLS, occupations are defined into seven categories: professional, manager, clerical, sales, services, production and agricultural.[28].

The results are presented in Table 8. As shown in Column 2, we find that for those who work in the same occupation as the mother, the intergenerational coefficient is larger compared to the daughter who works in a different occupation. Notice that the size of the coefficient in the second column is less precisely estimated, presumably due to the small sample size. I argue, however, that the results could serve as suggestive evidence that points to occupation-specific human capital transfer playing some roles in terms of transmission. Alternatively, as presented in Appendix A6, I estimate equation 1 but alter the mother's employment to a set of dummies of categorical variables, representing the combination of mother and daughter working dummy variable interacting with whether they were in the same occupation. Using neither mother nor daughter working as baseline categories, we can see the large size of the intergenerational effect driven by those who work in the same occupation.

6.3 Peer effects and community norms

The correlation of mother and daughter participation may be driven by a confounding factor where women in their community are more or less engaged in the labour market.

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[28]Grouping by industry or sector is also possible. However, at first, in IFLS1, the survey did not provide coded sectors. Secondly, I argue that occupations would reflect better similarities of human capital-specific requirements rather than industry sectors.

On the other hand, community beliefs may also be a reflection of mother participation. So, instead of observing the mothers' participation effect, it may be driven by endogenous community beliefs when the daughters grow up.

To test, I estimate equation 2 with additional covariates of the share of older women participating, excluding the person herself, at the community level. As shown, the magnitude of mother participation does not change much. The other way is to tease out information on community beliefs. IFLS provides community-level questionnaires on common practices and customs towards gender roles. Controlling whether individuals reside in communities that follow traditional roles shows no significant differences in terms of intergenerational correlation differences (using interaction).

I test this hypothesis by estimating intergenerational effects considering differences in cultural norms. The IFLS allows testing such heterogeneity directly. As mentioned in Section 3, since the second wave, IFLS possesses rich community-level information including a customs ('adat') and cultural practice module. A community is defined as a locality that consists of several sub-districts. IFLS asks the community leader[29] about various information from public facilities to common practices. This information is available from IFLS2 to IFLS4[30]. Hence, I extract information about community beliefs on female roles in society. Two questions were potentially used as my proxies for community norms. First, a question on whether society accepts that women are allowed to have a job outside the home. Second, a question on whether women are allowed to set up businesses. I take the first question as my main proxy of community norms since it captures a more conservative definition of gender roles.

I estimate equation 2 separately for those who live in communities that accept pro-equality gender roles and otherwise. The results are presented in Table 9. The first column of Table 9 reports the intergenerational link for those who live in a pro-equality society. The second column reports on female samples living with more traditional norms. As expected, the size of the intergenerational link is not precisely estimated for traditional norm samples. In contrast, a significant and larger correlation is found in the pro-equality community. Notice that this result is driven regardless of perceptions of the the background community (where the daughter was born). This result suggests that community norms, or how the society where the female lives, matter a lot in whether they adapt to more modern perspectives.

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[29]This can be the head of a sub-district, a respected person such as the leader of the 'adat' community, or perhaps an influential person in the locality

[30]IFLS5 did not collect customs and cultural practice questions

Table 9: Peer and community effects on mother-daughter's intergenerational link

| | Daughter's lifetime employment | | |
	(1)	(2)	(3)
Mother lifetime empl (cohort)	0.089***	0.089***	0.088***
	(0.019)	(0.020)	(0.020)
LFP at community level by cohort	0.138***		0.139***
	(0.045)		(0.046)
Lived in pro-equality community		0.018	0.019
		(0.014)	(0.014)
N	2,576	2,515	2,515
Mean	0.013	0.014	0.014
Adj. R2	0.054	0.052	0.056
Province fixed effect	yes	yes	yes
Covariates	yes	yes	yes
Sample	All	All	All

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05,
*** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). The
dependent variable is the daughter's lifetime employment estimated from the linear pre-
diction of the panel fixed effect model using the working history module (see equation
2). Mother's lifetime employment was also estimated from the linear prediction of the
panel fixed effect model using the working history module (see equation 2). We restrict
the sample to be between 2-19 years old and unmarried in 1993.

6.4 Role-model effect

Farre and Vella (2013) argue that the role-model effect is the key mechanism behind the
daughter-mother intergenerational link in labour force participation. This is related to the
importance of self-image (Akerlof and Kranton, 2000). If a role-model effect exists, we
should observe the following. First, there is evidence that points to the role of cohabitation
and the magnitude of intergenerational correlation. Second, as discussed by Bettinger and
Long (2005), a mother's son must also be affected with a smaller magnitude. Third, there
is a positive association with a mother's perspective of gender roles within the family.

In this paper, I construct the sample such that we observe individuals living together
with their mothers in their adolescence. This cohabitation is important as daughters ob-
serve their mother's behaviour. To test this, I compared the correlation with a larger pool
of mother and daughter pairs, exploiting the co-residence module. I exploit the richness
of the IFLS dataset to construct another alternative sample construction. Since the IFLS2,
the survey has asked respondents about mothers' and daughters' information, including
employment status. The questionnaire asked, 'what is the activity that their mother/ fa-
ther spent the most'. This allows me to construct a larger analysed sample to estimate
inter- generational correlation. In practice, I collect data from 15 to 65 year-old women
that can provide their mother's employment information. This approach is similar to pre-
vious studies such as Fernández et al. (2004) and, as mentioned earlier, this construction

is prone to less accurate measures of mother employment as it is based on the daughter's perception of the mother's employment. Table A4 reports the results. I find a positive and significant intergenerational correlation with a smaller magnitude compared to baseline results in Table 2.

Empirical evidence suggests a stronger role-model effect for same-gender pairs compared to opposite-gender pairs. Bettinger and Long (2005) find that women instructors at school would affect female students more than male students. Beaman et al. (2012) and Porter and Serra (2020) show that female leadership inspired more young women to attain higher education in India. Thus, we should expect a stronger role-model effect between mother (father) and daughter (son) pairs compared to the mother (father) and son (daughter) pairs.

To test this hypothesis I estimate equation 2 using a sample of mother and son samples. The sample construction process mimics my main daughter's estimation as detailed in Section 3. In contrast with my daughter's sample. I also constructed the measure of lifetime employment for the pair of mother and son samples. The results are presented in Table 10. It emerges that the intergenerational correlation between mother and son is significant and positive as expected. The significant and positive correlation is robust over unconditional specification and full-covariates specification. After controlling for household and individual characteristics, as shown in Table 10 column 3, I find an intergenerational correlation of 0.31. This coefficient size is about a third of the intergenerational correlation coefficient of the mother-daughter pair in Table 2 column 3. Altogether this provides evidence of the existence of the role-model effect

As the last piece of evidence for the role-model effect, I argue that the role-model effect could be reflected by the correlation between household decision-making rules between mother and daughter households. A daughter would observe how much her mother was involved in household decision-making and may behave similarly. Hence, this should be taken as indicative evidence. I use household decision-making based on time allocation, which has been available since IFLS2. The list of 17 decision items covers daily chore activities, childcare, and some personal matters (see Figure A1).[31] The survey allows for

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[31]In practice, 'We would like to know how your family makes decisions about expenditures and use of time'. The list of decisions includes expenditure on food eaten at home, choice of food eaten at home, routine purchases for the household of items such as cleaning supplies, your clothes, your spouse's clothes, your children's clothes, your children's education, your children's health, large expensive purchases of household, giving money to your parents/family, giving money to your spouse's family, gifts for parties or weddings, money for monthly 'arisan' (saving lottery), money for monthly saving, time the husband spends socialising, time the wife spends socialising, whether you/ your spouse works, whether you and your spouse use contraception. Respondents were asked to attribute across multiple possible individuals living in the household that covers: grandchild, son/daughter-in-law, grandparent, sister-in-law, brother-in-law, sister, brother, father-in-law, mother-in-law, father, mother, daughter, son, spouse, and respondent itself

Table 10: Mother-son intergenerational link of lifetime employment

	Son's lifetime employment		
	(1)	(2)	(3)
Mother's lifetime employment	0.081***	0.043***	0.031**
	(0.015)	(0.014)	(0.015)
N	3,902	3,696	3,696
Mean	0.110	0.113	0.113
Adj. R2	0.009	0.150	0.156
Province fixed effect	no	no	yes
Covariates	no	yes	yes
Sample	Mother-son	Mother-son	Mother-son

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and son pairs in IFLS1 (1993). The dependent variable is the son's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993. Regressions control for covariates including individual characteristics, mother characteristics, and son's household characteristics as presented in Table 2.

multiple individuals to be involved in decision-making. Then I measured the share of total household decisions made by the husband's spouse (the mother herself), for both mother's household in 1993 and daughter's household in 2014.[32] To test, first I estimate the correlation between the mother's share of decision-making and the daughter's share of decision-making.

Table 11 summarises the result. From Table 11 Columns 1 and 2 it emerges that I find statistically significant evidence that mother's (daughter's) labour force participation has a positive relationship with mother's (daughter's) share in decision-making, as expected. Finally, I find a positive association between mother and daughter's share of decision-making from the result of the last column of Table 11. This intrahousehold bargaining power is endogenous to the corresponding mother and daughter's employment. The existence of a positive correlation shows evidence that daughters observe their mother's gender role behaviour. It is also possible that the result is driven by the direct empowerment effect of labour force participation in household decision-making.

7   Sensitivity tests

In Section 2, I argue that restricting a daughter's age to 2 to 19 years old in the baseline year would provide the best estimate of intergenerational correlation. Thus, as my first robustness check, I relax this restriction and allow for an alternative range of age of daughters at

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[32]it is also possible to be cautious about whether females will reveal the real household decision-making. Since the question is asked to everyone, I can compare household decision-making rules from both a husband and wife perspective. I find that among spouses their answers do not significantly differ from each other.

Table 11: Household decision rule mother-daughter intergenerational link

	(1) Mother's employment	(2) Share of decision made by spouse (daughter)	(3) Daughter's employment
Share of decision made by spouse (the mother)	0.120**	0.084***	-0.030
	(0.059)	(0.027)	(0.059)
Mother lifetime employment			0.085***
			(0.029)
Share of the decision made by the spouse (the daughter)			0.137**
			(0.064)
N	2,392	1,376	1,205
Mean	0.015	0.013	0.012
Adj. R2	0.266	0.018	0.076
Province fixed effect	no	no	no
Covariates	no	no	no
Sample			

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from mother and daughter pairs in IFLS1 (1993). The dependent variable is the daughter's lifetime employment estimated from the linear prediction of the panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from the linear prediction of panel fixed effect model using the working history module (see equation 2). We restrict the sample to be between 2-19 years old and unmarried in 1993.

baseline year. I expect the intergenerational correlation to remain positive and significant. Furthermore, this test would serve as a heterogeneity check as alternative age groups may reflect the timing of exposure to a mother's employment during one's childhood.

Table 12 Column 1 and Column 2 summarise two estimates using alternative daughter's age in 1993. Both intergenerational coefficients remain positive and significant as expected. Using a larger pool of all daughters aged 0 to 40 years old in 1993, the estimated intergenerational correlation is slightly higher than the estimation using daughters aged 7–13 years old. Notice that the sample size is almost halved in more restricted samples. Table A2 in Appendix A reports more alternative age groups of the daughters in the baseline year, respectively, for OLS and the lifetime employment approach. Overall, compared with my results in Table 3, my findings hint that exposure timing, in terms of observing the mother's labour market participation, plausibly plays an important role in the daughter's participation in the future. This could be a potential future research avenue.

Previous studies mostly focused on married women only, as many of them focus on the mother-in-law effect (Fernández, 2013; Chen and Ge, 2018). In these papers, the authors argue that such an intergenerational effect should exist regardless of marital status. However, to be comparable to previous studies, I estimate equation 2 for a married sample only. One may expect that results from married women may also be affected by mother-in-law effects. Hence, I also add a control for the spouse's mother's employment status, if known, in my sample. Recall that in Figure 2, that due to the sample construction, it is

possible to not observe a spouse's maternal employment since they were joiners. Table 12 Column 3 presents the results. I find that intergenerational correlation remains positive and statistically significant. In Table A3 in Appendix A, I provide the same estimate under different choices of age. The results remain robust as the mother's employment coefficient remains positive and statistically significant. These results are important as they dismiss doubt about whether the results are driven by assortative matching.

We discussed earlier that local labour demand matters, as adding province fixed effects alters intergenerational correlation quite significantly. Using province fixed effects, however, lets the model be restricted. My next sensitivity test is to modify the estimation model such that I use several labour demand-related provincial characteristics in 2014 instead of a fixed effect. I control for the level of the unemployment rate, the log of the total labour force (in thousands), the log of gross domestic product per capita and the Human Develop- ment Index. These characteristics are reported in official statistics from BPS. Table 12 Column 4 summarises the results. It suggest that my results are robust over this alternative specification.

The next sensitivity test relates to the sample construction, as discussed in Section 3. First, I mentioned that in my preferred sample, I dropped a daughter who was already married in 1993. The rationale behind this was to purge a potential in-laws effect instead of their own mother's employment. For my fourth sensitivity test, I relax this restriction as I include those who were already married in 1993. As depicted in Table 12 Column 5, I find that the intergenerational correlation remains positive and statistically significant.

My last sensitivity checks, as summarised in the last column of Table 12 relate to the role-model channel discussion in the previous section. As mentioned earlier, the IFLS provides information on non-cohabitant members including parents of adult respondents. In particular, the survey asked about the main activity of either mother or father when the respondent was 14 years old. Using this information, we could estimate intergenerational links for larger observations as it also includes joiners. I find that a positive intergenerational correlation does exist for mother-daughter pairs, albeit smaller than our preferred results, using either a cross-sectional or permanent component approach. Furthermore, using this non-cohabitant family member information, we could also estimate the own mother's effect conditioning on the spouse's mother's employment. As shown in Table A5 in Appendix A Column 3 Panel C, I find that the mother effect is statistically significant and slightly larger than the mother-in-law effect.

Table 12: Robustness check

	(1) Daughter's age in '93 0-19	(2) Daughter's age in '93 7-13	Daughter's employment (3) Married sample only	(4) Provinces level covariates	(5) Incl. daughter was married in '93	(6) Self-report mother work
Mother lifetime employment	0.094***	0.123*	0.080***	0.094***	0.090***	
	(0.019)	(0.071)	(0.026)	(0.019)	(0.019)	
Mother work when daughter aged 14						0.014*
						(0.007)
N	2,710	230	1,331	2,576	2,576	22,834
Mean	0.015	0.001	0.013	0.013	0.013	0.595
Adj. R2	0.049	0.063	0.056	0.042	0.051	0.095
Prov F.E.	yes	yes	yes	no	yes	no
Cluster S.E	yes	yes	yes	yes	yes	yes

Standard errors are clustered at the mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Each column reports separate regression. For columns (1) to (5), the dependent variable is the daughter's lifetime employment estimated from the linear prediction of panel fixed effect model using the working history module (see equation 2). Mother's lifetime employment was also estimated from linear prediction for estimation reported in Column (1) to Column (5) Column (1) reports estimation using a sample of daughters aged 0-40 years old in 1993. Column (2) reports estimation using a sample of daughters aged 7-13 years old in 1993. Column (3) reports estimation using only married daughter with additional control of in-laws Column (4) reports estimation after controlling for provincial covariates in 2014 which include: unemployment rate, log GDP per capita, log of labour force (in thousand), Human Development Index Column (5) reports estimation including a daughter who were married already in 1993. Column (6) reports estimation using a pool of women individuals in IFLS aged 15 to 65 years old. Mothers employment in Column (6) retrieved from daughters' reports on activities that their mothers mostly spent on. Clustered standard error at mother level in Column (1) to Column (5). I use robust standard error in Column (6). Regressions control for covariates including individual characteristics, mother characteristics, and daughter's household characteristics as presented in Table 2.

8 Conclusion

I study the correlation between a mother's labour supply decision during her daughter's childhood and adolescence and her daughter's labour supply decision in their adulthood. Previous empirical evidence suggests mixed results (Fernández, 2013; Campos-Vazquez and Velez-Grajales, 2014; Morrill and Morrill, 2013; Chen and Ge, 2018; Galassi et al., 2019). Furthermore, empirical evidence from developing countries is very limited (Campos-Vazquez and Velez-Grajales, 2014; Chen and Ge, 2018). This paper contributes to the literature by providing evidence that intergenerational correlation does exist using Indonesian data. In contrast to previous literature (Fernández, 2013; Chen and Ge, 2018; Morrill and Morrill, 2013) that focuses on married women, this paper extends the analysis to include either unmarried or married women.

I use the longitudinal feature of the IFLS to set up a daughter-mother employment correlation. After controlling for individual characteristics, my baseline estimation suggests that the likelihood of employment increases by 3.7% if one comes from a family with a working mother. To put this into perspective, this correlation coefficient is equivalent to two times additional years of schooling. Further, I use the permanent component approach to estimate daughter participation in the mother's lifetime employment following Chadwick and Solon (2002). Under this approach, I find an even larger mother's employment participation effect on the daughter's participation, which is about 10%

In this paper, I argue that occupation-specific human capital transfer and the role-model effect are the potential main drivers behind the intergenerational correlation. I observe that daughters that follow a similar occupation to their mothers retain a stronger intergenerational correlation between mother and daughter. On the other hand, I do not find strong evidence that this result is driven by the direct transmission of gender roles proxied by bargaining power within the household. As caveats to my investigation, this paper does not provide a precise decomposition of the contribution of each possible mechanism to the intergenerational correlation.

To conclude, I find that mothers' labour supply decisions in the labour market are significantly and positively associated with their own daughter's labour supply decisions. I contribute to the lacking empirical evidence on intergenerational correlation in the female labour supply in developing countries' context, by exploiting the richness of the Indonesian longitudinal survey known as the IFLS. My findings complement previous work on the importance of the role-model effect and occupation-specific transfer from mother to daughter. At the same time, my findings contest the idea that only the mother-in- law channel matters in shaping female labour force participation trends. As to policy relevance, my findings resonate with the importance of taking into account norms and cultural aspects of female employment, as campaigned by previous studies (Jayachandran, 2021). Improving female labour force participation may also involve more than economic incentives. Finally, I acknowledge the following as caveats to my study. My study presents evidence of several possible mechanisms but does not precisely measure how much each of those contributes to the intergenerational correlation. This paper also has a limited understanding of the importance of the timing effect of exposure to mothers' employment on intergenerational correlation. The paper does not explore the role of extended family members, which is a common family formation in Indonesia. The aforementioned limitations of this paper could be important directions for future research agendas.

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Appendix A.

Table A1: Summary statistic by urban-rural

	Rural	Urban	Total
Panel A. Daughter			
Daughter's LFP in 2014	0.472	0.479	0.476
	(0.499)	(0.500)	(0.499)
Daughter's year of schooling in 2014	5.814	7.989	7.040
	(4.274)	(4.119)	(4.324)
Daughter's age in 2014	30.53	31.41	31.03
	(4.631)	(4.855)	(4.778)
Daughter's married in 2014	0.841	0.808	0.822
	(0.366)	(0.394)	(0.382)
Muslim	0.845	0.874	0.861
	(0.362)	(0.332)	(0.346)
HH member aged 0-5 in 1993	0.776	0.662	0.712
	(0.829)	(0.755)	(0.790)
Household members aged 6-15 in 2014	0.858	0.853	0.855
	(0.992)	(1.005)	(1.000)
Female household head in 2014	0.117	0.101	0.108
	(0.322)	(0.301)	(0.311)
(Log) Household income (0000's IDR)	431.6	146641.5	82841.9
	(571.9)	(3818026.5)	(2867119.0)
(Log) Household exp (0000's IDR)	87.74	127.5	110.2
	(64.06)	(115.8)	(98.65)
Panel B. Mother			
Mother's LFP in 1993	0.536	0.403	0.462
	(0.499)	(0.491)	(0.499)
Mother's year of schooling in 1993	1.999	3.620	2.903
	(2.579)	(3.746)	(3.379)
Mother's age at 1993	36.32	36.80	36.59
	(9.427)	(8.660)	(9.009)
(mean) fage	41.54	41.98	41.79
	(10.49)	(9.540)	(9.967)
(mean) fyos	2.333	4.209	3.380
	(3.139)	(4.193)	(3.877)

Source IFLS1 and IFLS5. The sample are a daughter who were unmarried, lived with their mother, and was aged 2-19 years old.

Table A2: Mother-daughter's intergenerational link of labour force participation

	Age in 1993				
	(0-40)	(2-40)	(2-19)	(7-13)	(5-18)
Panel A. No Control					
Mother's LFP in 1993	0.054***	0.063***	0.063***	0.084***	0.062***
	(0.014)	(0.015)	(0.015)	(0.022)	(0.017)
N	5,867	5,405	4,863	2,220	3,959
Mean	0.476	0.480	0.476	0.461	0.474
Adj. R2	0.003	0.004	0.004	0.007	0.004
Panel B. with Control					
Mother's LFP in 1993	0.046***	0.052***	0.048***	0.083***	0.052***
	(0.014)	(0.015)	(0.016)	(0.023)	(0.017)
N	5,481	5,054	4,560	2,081	3,712
Mean	0.476	0.480	0.475	0.459	0.472
Adj. R2	0.061	0.066	0.068	0.065	0.060
Panel C. with Control + Province FE					
Mother's LFP in 1993	0.036**	0.041***	0.036**	0.068***	0.038**
	(0.014)	(0.015)	(0.016)	(0.023)	(0.018)
N	5,481	5,054	4,560	2,081	3,712
Mean	0.476	0.480	0.475	0.459	0.472
Adj. R2	0.078	0.083	0.084	0.080	0.079
Covariates	yes	yes	yes	yes	yes
Fixed effects	yes	yes	yes	yes	yes

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The sample is drawn IFLS1 (1993) and IFLS5 (2014). The dependent variable is the daughter's labour force participation We restrict the sample to unmarried daughters in the baseline year. Age restriction is indicated by the column title. Regressions control for covariates including individual characteristics, mother characteristics, household characteristics and others. Standard errors are clustered at the mother level.

Table A3: Mother-daughter's intergenerational link of lifetime employment

| | Age in 1993 | | | | |
	(0-40)	(2-40)	(2-19)	(7-13)	(5-18)
Panel A. No Control					
Mother lifetime employment	0.120***	0.119***	0.121***	0.124***	0.124***
	(0.016)	(0.017)	(0.017)	(0.022)	(0.018)
N	3,003	2,862	2,734	1,408	2,341
Mean	0.016	0.016	0.015	0.016	0.015
Adj. R2	0.019	0.019	0.020	0.020	0.021
Panel B. with Control					
Mother lifetime employment	0.105***	0.104***	0.100***	0.097***	0.102***
	(0.017)	(0.018)	(0.018)	(0.024)	(0.020)
N	2,834	2,700	2,576	1,331	2,207
Mean	0.016	0.014	0.013	0.013	0.013
Adj. R2	0.039	0.038	0.039	0.042	0.036
Panel C. with Control + Province FE					
Mother lifetime employment	0.095***	0.091***	0.088***	0.079***	0.087***
	(0.018)	(0.018)	(0.019)	(0.026)	(0.020)
N	2,834	2,700	2,576	1,331	2,207
Mean	0.016	0.014	0.013	0.013	0.013
Adj. R2	0.049	0.051	0.052	0.056	0.049
Covariates	yes	yes	yes	yes	yes
Fixed effects	yes	yes	yes	yes	yes

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The sample is drawn IFLS1 (1993) and IFLS5 (2014). The dependent variable is lifetime employment estimated from the linear prediction of the panel fixed effect model (see equation 2). We restrict the sample to unmarried daughters in the baseline year. Age restriction is indicated by the column title. Regressions control for covariates including individual characteristics, mother characteristics, household characteristics and others. Standard errors are clustered at the household level.

Table A4: Intergenerational labour force: Using self-report mother status

| | Age in 2014 | | |
	(15-65)	(2-40)	(19-45)
Panel A. No Control			
Mother work in the past	0.005	-0.016	0.016
	(0.009)	(0.011)	(0.014)
N	29,083	20,494	12,732
Mean	0.669	0.676	0.700
Adj. R2	-0.000	0.000	0.000
Panel B. with Control			
Mother work in the past	0.019**	0.016	0.029**
	(0.008)	(0.010)	(0.014)
N	27,561	19,445	12,036
Mean	0.668	0.675	0.699
Adj. R2	0.014	0.041	0.013
Panel C. with Control + Province FE			
Mother work in the past	0.011*	0.010	0.026***
	(0.006)	(0.007)	(0.009)
N	27,561	19,445	12,036
Mean	0.668	0.675	0.699
Adj. R2	0.020	0.046	0.019
Covariates	yes	yes	yes
Fixed effects	yes	yes	yes

Standard errors in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from IFLS5 (2014). Age restriction is indicated by the column title. Regressions control for covariates including individual characteristics, mother characteristics, household characteristics and others. Standard errors are clustered at the district level.

Table A5: Intergenerational labour force: Using self-report mother status

	Age in 2014		
	(1)	(2)	(3)
	(15-65)	(2-40)	(19-45)
Panel A. No Control			
Mother work in the past	0.039***	0.011	0.022
	(0.011)	(0.019)	(0.019)
Spouse mother work	0.039***	0.039	0.034
	(0.013)	(0.025)	(0.024)
N	10,529	5,391	4,019
Mean	0.667	0.654	0.689
Adj. R2	0.003	0.001	0.001
Panel B. with Control			
Mother work in the past	0.045***	0.022	0.035*
	(0.011)	(0.018)	(0.019)
Spouse mother work	0.040***	0.037*	0.033
	(0.012)	(0.020)	(0.020)
N	10,039	5,155	3,844
Mean	0.668	0.654	0.689
Adj. R2	0.012	0.023	0.008
Panel C. with Control + Province FE			
Mother work in the past	0.039***	0.018	0.036**
	(0.011)	(0.015)	(0.017)
Spouse mother work	0.034***	0.034**	0.031*
	(0.010)	(0.015)	(0.016)
N	10,039	5,155	3,844
Mean	0.668	0.654	0.689
Adj. R2	0.020	0.029	0.016
Covariates	yes	yes	yes
Fixed effects	yes	yes	yes

Standard errors in parentheses. * p <0.10, ** p <0.05, *** p <0.01. The sample is drawn from IFLS5 (2014). The dependent variable is the daughter's labour force participation. Age restriction is indicated by the column title. Regressions control for covariates including individual characteristics, mother characteristics, and household characteristics. Covariates include the daughter's year of schooling, age, marriage status, having children age 0-5 years old in the daughter's household, household member aged 6-15 years old in the daughter's household, daughter's household income in log, daughter's household per capita expenditure in log, dummy of a daughter is household head, mother year of schooling, father year of schooling, dummy of staying at the same household as a mother. Standard errors are clustered at the household level.
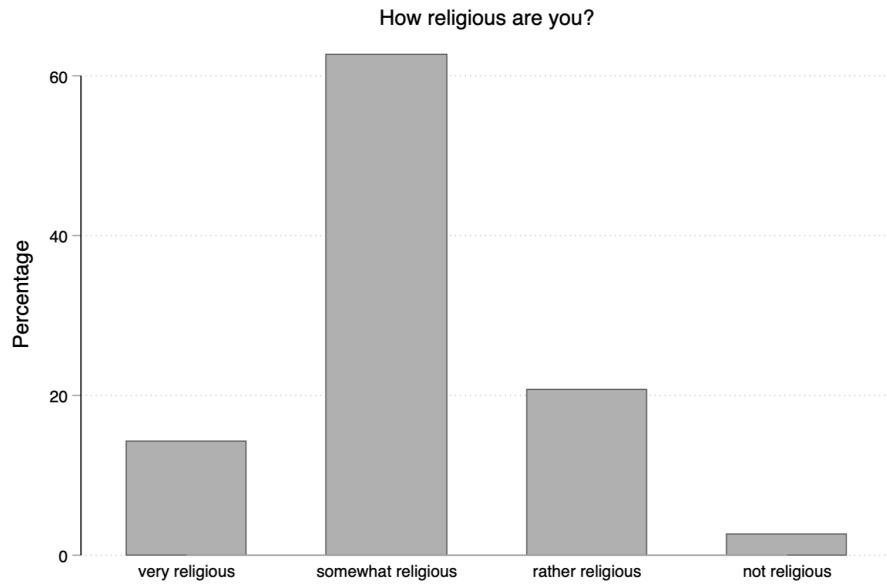
Figure A1: Snippet of the decision-making questionnaire in IFLS

We would like to know how your family makes decisions about expenditures and use of time.

EXPENDITURES AND USE OF TIME (PK2TYPE)	RESPONDENT	SPOUSE	SON	DAUGHTER	MOTHER	FATHER	MOTHER-IN-LAW	FATHER-IN-LAW	BROTHER	SISTER	BROTHER-IN-LAW	SISTER-IN-LAW	GRANDPARENT	SON/DAUGHTER IN-LAW	GRANDCHILD
A1. Expenditure on food eaten at home	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
A2. Choice of food eaten at home	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
B. Routine purchases for the household of items such as cleaning supplies	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
C. Your clothes	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
D. Your spouse's clothes	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
E. Your children's clothes	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
F. Your children's education	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
G. Your children's health	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P
H. Large expensive purchases for the household (i.e., refrigerator or TV)	A	B	C	D	E	F	G	H	I	J	K	L	M	O	P

In your household, who makes decisions about: (CIRCLE ALL THAT APPLY ON EACH LINE)

Source: IFLS5 questionnaire

Figure A2: Self-reported level of religiosity of respondents in IFLS5

Source: Author's calculation based IFLS5