Intergenerational Link of Women Employment: Evidence from Indonesia[*]

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Abstract

I investigate the existence of an intergenerational link between women's labor 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 the intergenerational link in female attachment in the labor 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 the mother's lifetime employment and the daughter's lifetime employment. I find that a mother's employment affects her daughter's employment decision in the future. From the baseline specification result, this intergenerational link coefficient is equivalent to more than two additional years of education. This suggests meaningfulness and the importance of intergenerational belief transfer in shaping the next generation of the female labor force. Finally, I provide evidence that the role-model effects and occupation-specific human capital transfer are the main plausible mechanism behind the intergenerational correlation. The study highlights the challenges of any efforts to improve the female labor supply given a slowly changing social norms society.

1 Introduction

From 1961 to 1990, female labor force participation (LFP) in Indonesia has dramatically improved from about 31%[1] to around 50% (ILO Stat). Since then, participation has been slowly moving upwards (Cameron et al., 2018). This resemblance of an S-shaped female labor force participation is evident in many countries. A growing literature suggests an intergenerational correlation of employment between mothers and offspring generation is responsible for such a dramatic increase in participation (Fernández et al., 2004; Fogli and Veldkamp, 2011; Bertrand et al., 2015) that is typically followed by signs of stagnation. Previous studies predominantly point to the relationship between a woman and mother-in-law as the main cause of such intergenerational correlation Fernández et al. (2004); Fogli and Veldkamp (2011). However, more studies emerge to show the intergenerational link between a woman to her daughter (Farre and Vella, 2013; Galassi et al., 2019) is, at least, as important as a woman to her mother-in-law channel. Important to note that 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 cause and mechanism behind the intergenerational link between mother and daughter if it exists. To that purpose, this paper provides empirical evidence that supports the existence of intergenerational correlation in the labor supply of a mother and her daughter using Indonesia as a study case. This paper discusses several potential mechanisms of the intergenerational correlation on the back of cultural and kinship values 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 labor 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 effect and intergenerational transmission in terms of female involvement in the labor market in Indonesia are non-existence 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, in exception to (Galassi et al., 2019) work, most

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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 Labor Market Survey (SAKERNAS) in 1976 which became annually surveyed in 1985.

studies (Fernández et al., 2004; Chen and Ge, 2018) rely on one-period measures of mother's and daughter's employment, where 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 the role-model effects and occupational-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 the intergenerational link of labor 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 are relatively limited discussions on extensive margins. This paper closely relates to the growing literature that put social norms and gender attitudes transmission as latent factors that affect female labor 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 lays a theoretical foundation of incorporating self-image and social norms belief in the individual objective function. Bisin and Verdier (2001) extends 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) uses this framework to establish the very first framework on intergenerational transmission in female labor participation. They argue that the marriage market is the 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 the mother-daughter intergenerational link 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 internalization 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 social gender norms in society. Surprisingly, even in developed countries, where arguably the education level for women has significantly improved, they find that traditional gender norms can explain some of the lowering participation rates, especially for married women. The prediction is that changing social norms will largely contribute to female labor 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 growing literature on how social networks and community beliefs affect women's decision to supply labor Nicoletti et al. (2018); Bursztyn et al. (2018). When a

woman decides to work, she is influenced by her gender attitudes towards work, the norms perceived by society as well as peer-effects.

In Indonesia, there has been growing literature on intergenerational transmission studies. Silalahi and Setyonaluri (2018) find an intergenerational correlation of fertility decisions of mother-daughter pairs. Daughters were found to have similar fertility behavior on reproductive intention. They argue this suggests strong intergenerational transmission of family norms. In terms of education, Duflo (2004) find evidence that the offspring generation of cohorts that were exposed to a massive school construction project in the late 70s attained more education significantly. In a similar spirit, Kim et al. (2015), using the IFLS dataset, presents an intergenerational link not only to the extent of education choice but also to health status. They find a positive and strong correlation between parents' health and education to 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 existing literature, there is a huge gap in the intergenerational literature in terms of labor 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 labor 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 labor outcome in IFLS5 in 2014. As my baseline estimation, I apply the least square estimate of the daughter's labor 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 effect, I find a positive and significant intergenerational correlation. Next, since the measure of LFP is cross-sectional, I follow 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 labor 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 the null effect of their own mother's LFP on

their daughter's 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 labor 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) estimates a lack of the daughter's household covariates such as expenditure and income which are proven to be significant factors in my estimate. Special attention to Galassi et al. (2019) results, which find the largest size of the 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 have a hint into the issue. Adding proxies of local demand labor changed the result substantially. I claim this as evidence of how important the local labor demand and local institutional settings affect the intergenerational link of LFP.

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 mother and daughter, 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 correlated and substantially affect 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 occupational-specific human capital transfer. It emerges from a stronger intergenerational correlation between mother and daughter 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 mother and daughter's labor 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 community. I

find however, 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 to have a significant role in shaping intergenerational correlation. First, by comparing my result from my preferred sample and a less restrictive alternative sample, I find results that imply cohabitation during childhood preserves a stronger intergenerational link. Second, mother-son intergenerational correlation does exist but in 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 behavior of both mother's household and the daughter's household. I then present a positive correlation between the mother's behavior and the daughter's behavior in household decision-making.

The remainder of the paper is organized 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 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,[2] 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.[3]

Despite diverse ethnicities, the patrilineal system dominates kinship practice in Indonesia. Most of the main ethnic groups, such as Javanese, Sundanese, and Bataknese,[4] 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 pattern and post-marriage residence, this dominant patrilineal culture leads to a high level of endogamy and

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[2]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)

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

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

patrilocal practice (Utomo, 2016).

Similar to most Asian-cultured countries, financial transfer from children to parent, as well as co-residency, are a common practice for Indonesian (Frankenberg and Kuhn, 2004). After marriage, children chose to live with either 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 and birth cohorts across ethnicities (Cameron and Cobb-Clark, 2008). For instance, in India, only the eldest male in the family must provide financial transfer to their parents. Children generation also benefited from such practice. This household structure may also benefit as it provides informal child-careWitoelar (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 above-discussed living arrangements are particularly common in rural areas and 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).

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 eras (in the period of 1960s to 1980s, which was also known as The Old Order - *Orde Lama*), the central government actively promotes 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 centers around supporting their husbands and children (Wieringa, 2003). The core value of the idea "Kodrat" is closely related to the Islamic interpretation of the role of husband and wife. This concept of women's role in society is implicitly embedded in the Marriage Act of 1974, which emphasizes a wife as a 'housewife' who shall manage the household to the best of her ability. It is believed that the reason for the government to be actively involved in promoting the traditional value of women's position in society is to counter the communist influence. In the 60s there were strong ties between the feminist movements and the communist party. Despite the government promotion of the traditional values of women's position, female LFP significantly increased between 1965 and 1980 (Manning, 1998; Robinson, 2008).

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 is evident though slow-moving. The World Value Survey (2019) asks the question which states 'when jobs are scarce men should have more fight for a job than women'. Overall, around 76% Indonesian interviewees agree

Figure 1: Perception on gender role, World Value Survey 2019

Jobs scarce: Men should have more right to a job than women
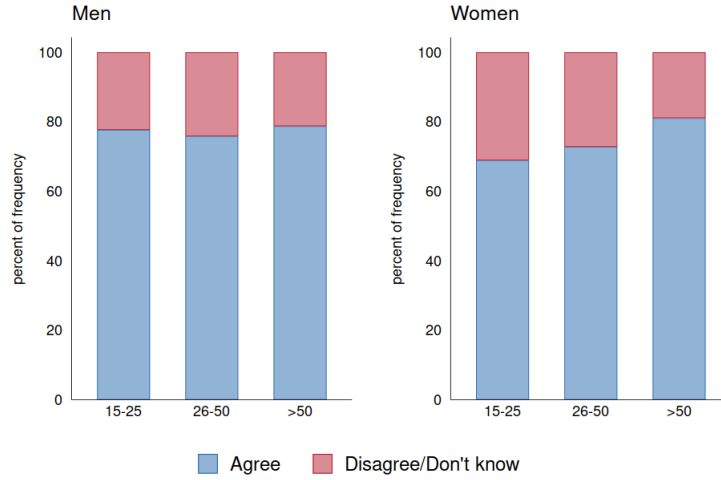
with the statement, while the ratio for men is 77% and for women it is 74%. However, if we examine the answer by birth cohorts it is clear that at least among women the gender norms towards female employment have evolved. Figure (1) plots the results. About 69% of women born before 1995 agree with the statement, 73% of those born between 1965 and 1995, and 81% older cohorts have the same opinion. This result provides indicative evidence of slow-moving gender norms shifting towards a more liberal view. Among male samples, however, such a shift is not observed. In addition, the survey also reveals that the respondents put gender gap issues and gender discrimination as less important issues compared to other social problems such as poverty, poor sanitation, inadequate education, and environmental issue.

3 Estimation strategy

I start with estimating the cross-sectional linear relationship between daughters' participation in adulthood and their mother's labor 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 measures whether daughter i, live in province j, participated in the labor market in her adulthood or not; $MLFP$ is a dummy variable that assigns one if the mother of daughter's i participated in the labor 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 effect and $\epsilon_{i,j}$ represents the error term. Assuming the covariates capture important confounding factors to the daughter's labor force participation, the coefficient β_1 represents the intergenerational link of labor force participation. This baseline specification is similar, in spirit, to Fernández et al. (2004)'s strategy.[5]

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.[6] 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.

The vector Z_i includes the mothers' and fathers' ages, years of schooling, and location of residence during the daughter's childhood period. Provincial fixed effects are used to control for other time-invariant local labor market shocks. As part of the sensitivity tests, I drop provincial dummies to allow several provincial-specific covariates such as unemployment rate and female labor 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 labor 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 parental-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' labor participation timing at a single observation year, requires a strong assumption that their employment is relatively time-invariant. However, in reality, female labor force participation has strong life cycle patterns. Analogous to

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[5]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

[6]to control for household wealth (Galassi et al., 2019)

the issue of mismeasuring parent and children's income using one data point instead of a lifetime or permanent income in intergenerational income mobility analysis,[7] the 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 the idea from the income mobility literature.

Following (Chadwick and Solon, 2002; 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 the individual-specific lifetime employment probability. Thus, my second approach is to estimate the relationship between permanent components of the daughter's and the 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, Indonesia Family Life Survey (IFLS), provides individual working history information and I use them to construct my panel data set. The 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

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

account that, over time, there has been a sizable shift in the life cycle profile of female labor 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' labor 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 behavior is associated with her mother's labor force participation behavior. 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); 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 (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 cooperation.[8] The sample frame of the survey covers 83% of the total population of Indonesia in 1993.[9] The survey was conducted in 13 out of 27 provinces, across 306 rural and urban communities.[10] 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).[11][12] From the second round onward, the survey

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

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

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

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

[12]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.

followed both the original households as well as their split-off households. As a consequence, the number of surveyed households grew to 16,931 households in the IFLS5. The IFLS has relatively high re-contact rates. As an illustration, in the latest round of IFLS5, the survey has successfully re-contacted 82% of IFLS1 main respondents (Strauss et al., 2016).[13]

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 red rectangular blocks indicate households and the blue connecting lines represent direct family relationships. People within the rectangular blocks live in 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 the son-in-law are the 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' self-reported information if the joiner is deemed to be the household head since the IFLS2.

Previous works on the intergenerational link of female labor participation mainly focus on establishing mother-in-law and daughters-in-law relationships (Fernández et al., 2004; Fogli and Veldkamp, 2011; Morrill and Morrill, 2013; Chen and Ge, 2018). Therefore, they only use married women's observation 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 the 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 with Fernández et al. (2004) in defining the mother's labor force participation. While (Fernández et al., 2004) rely on the daughters' information on their mother's employment status, I use actual observation of 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 mother employment timing. This is given by the age variation of daughter observation. Hence, my specification captures the heterogeneity of exposure timing of the mother's employment. Nevertheless, as mentioned in the previous

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[13]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
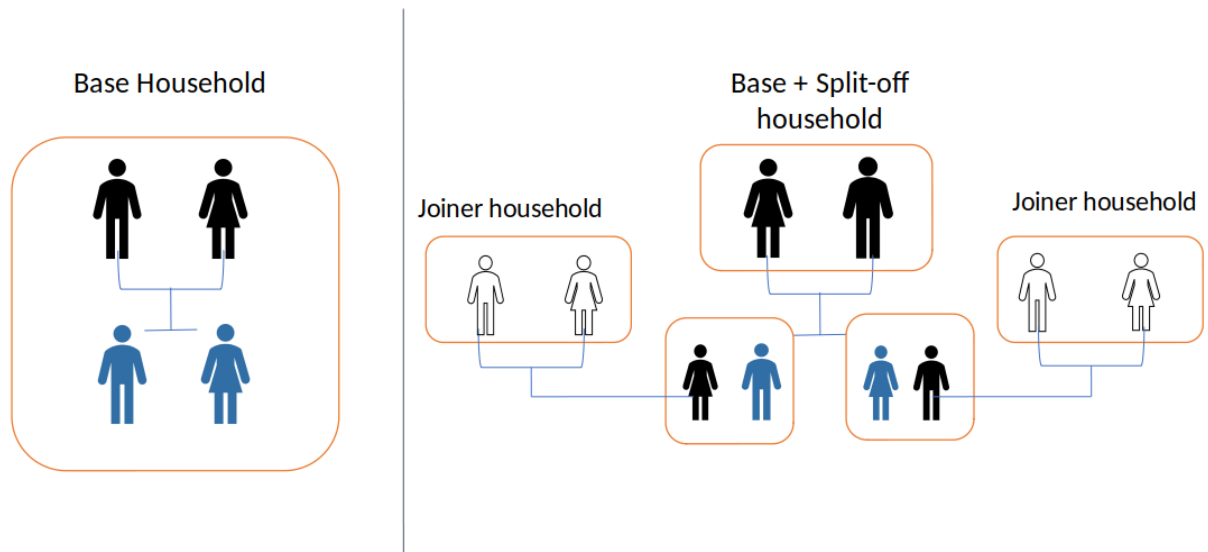
section, it is possible to set up an analogous approach as Fernández et al. (2004) using the availability of a non-household member module in the IFLS. I will present the results using the daughter's retrospective information as part of my sensitivity tests.

The IFLS survey has a rich array of socioeconomic information on households and individuals, including demographics, education, labor market outcomes, household income, expenditure, and within household decision-making details. The key demographic characteristics gathered in IFLS include age, education,[14] religion, urban or rural locality and migration status among many other variables. As for the labor 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 more this module 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 behavior of the daughters with that of their mothers. The IFLS allows me not only to observe the household characteristics of the

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

daughter's original household but also the daughter's household once she gets married. Accordingly, I observe labor market outcomes and other individual characteristics of both the daughter and mother. It also captures the household decision-making process in both the original and the split-off households, which I use to investigate whether daughters' household decision-making behavior resembles their mother's behavior.

One important feature of the IFLS that needs to be mentioned here is that the survey in each wave includes a working history module, which asks about individuals' past employment status in the last five to seven years, depending on inter-waves year gaps. I use this module to construct unbalanced panel data from 1988 to 2014, which are used to estimate equations (2) to generate individuals' permanent employment probability. It is important to note, however, that in this module, instead of information on labor 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 labor force.

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, an orphan is not included. This gives me 7,322 daughters observations, which includes both biological and adopted daughter.[15] 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 behavior. 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 were co-reside.

Next, since my study focuses on gender value internalization 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 in fear that those who married in their teens possess some unobservables. Later in the robustness check, I include 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.[16]   As for

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

[16]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,

the attrited daughters, the majority of them were due to moving out to a new household and relocated outside survey coverage or had died before the IFLS5 was conducted.[17] 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 to work by Halim et al. (2017), also using the IFLS dataset, suggests that women in Indonesia, become less likely to work by 15% a year before childbirth and start to return to the labor force, two years after. At the same time, I restrict daughters to be in their teens to ensure that their daughter is in their crucial developmental stage so that mother's behavior could influence her. A psychological study suggests that the social norms internalization process could start very early at childhood stages, peak-up between 13 to 15 years old and continue up to the adolescent period (Chandler and Connell, 1987).[18] 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.[19] The main benefit to follow this approach is that we measure the probability of the mother working at the same age profile of 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 3.2.

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 the attrition problems, compared to my approach which relied on one wave of observation. Under this approach, however, I am likely to observe daughters'

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these observations did not appear in more detailed questionnaires such as cognitive and health modules.

[17]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.

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

[19]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/

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 my 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 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 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 years of schooling, ten percent more likely to work in 2014, less likely to be married and more educated parents. These characteristics correlated positively with individuals' likelihood to participate in the labor 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

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. It 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 is 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 married. 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.[20] 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 found to be 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 the mothers' and daughters' labor force participation. In this paper, I define someone to be participating in the labor 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 labor force participation across waves. In 1993, around 46% of the mothers participated in the labor market, which is almost the same as their daughter's labor force participation rate in 2014. About 47.8 percent of daughters participated in the labor market in 2014. This participation rate is

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

slightly lower than overall female labor force participation of the SAKERNAS dataset[21] given the same birth cohort, which was around 50 percent.[22]

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 their marriage as discussed by Jones (2017). In terms of childbearing, the daughters in rural areas had more children compared to those in urban areas. As for mother characteristics, I find striking differences in terms of labor force participation. About 54% of rural mothers participated in the labor force in 1993 while 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 summarizes the estimated marginal effects of the mother's LFP on the daughter's LFP and the coefficients of the covariates that correspond to the 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 ef-

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

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

Table 1: Summary statistic

	mean	sd	min	max
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
	mean	sd	min	max
Panel B. Daughter;s profile in 1993				
Daughter's LFP in 1993	0.005	0.073	0.0	1.0
hurban	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			
	mean	sd	min	max
Panel C. Mother's profile in 1993				
Mother's LFP in 1993	0.462	0.499	0.0	1.0
Mother's year 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
(mean) fage	41.790	9.968	18.0	92.0
(mean) fyos	3.381	3.878	0.0	16.0
Observations	3085			

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

fects. 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 labor force in 1993, on average, the daughter's likelihood to participate in the labor 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 the provincial fixed effects, which aimed to take into account the local labor 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 the daughter's labor market decision as well as the local labor demand factors when examining the intergenerational correlation. Adding additional controls substantially reduced the correlation.

I consider the size of intergenerational correlation as being economically meaningful. In comparison to the other individual characteristics, the magnitude of the intergenerational correlation coefficient is about two additional years of education (0.018). Only marriage status and whether a daughter still lives in the same household as the mother are 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 labor 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 labor 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 labor 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 labor market. This may hint to us that the role of informal child-care support is important for the female labor 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 labor 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 summarized in Landmann et al. (2018) finds that patrilocality, which is rooted in patrilineal culture in general, has negative associations with female labor supply.

One interesting finding is related to income. I find that women's labor 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 labor supply suggests that the income effect on labor 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 earnings potential of the spouse (the woman) would also be high, hence, it captures some of the substitution effects.

5.2 Permanent component approach

The last section relies on daughters' and mothers' labor force participation at one point in time. However, women's labor 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 Chadwick and Solon (2002); Galassi et al. (2019) as discussed in Section 3.[23]

Table 3 summarizes 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 the data limitation, 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 4.

Column 1 of Table 3 shows that the unconditional intergenerational correlation, using 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 the maternal employment probability by 1 percent, increases the employment probability of

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[23]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 labor 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 member aged 0-5 in 2014		-0.021*	-0.019
		(0.012)	(0.012)
Household member 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)
Housheold head income in 2014		0.008***	0.007***
		(0.002)	(0.002)
Household per capita epxpenditure 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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993) who can be tracked in IFLS5 (2014). Dependent variable is daughter's labor force participation in IFLS5 (2014). We restrict sample to be between 2-19 years old and unmarried in 1993.

Table 3: Mother-daughter LFP intergenerational link - permanent component regression

	Daughter's employment (predicted)		
	(1)	(2)	(3)
Mother lifetime empl (cohort)	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 member 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)
Housheold head income in 2014		0.006***	0.005**
		(0.002)	(0.002)
Household per capita epxpenditure 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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

Table 4: Mother-daughter LFP intergenerational link

| | Daughter's employment (predicted) | | |
	(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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993) who can be tracked in IFLS5 (2014). Dependent variable is daughter's labor force participation in IFLS5 (2014). We restrict sample to be between 2-19 years old and unmarried in 1993.

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 their 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 zeros. Fernández et al. (2004) and Chen and Ge (2018), for instance, using the mother's participation when the daughter was 15 years old[24] in which they find a small, positive, yet not significant intergenerational link. This could easily relate to the 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 samples due to working history availability possess characteristics that positive bias towards employment likelihood. Despite the potential bias, the estimated intergenerational correlation is precisely estimated and consistent with the baseline results.

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 men, a mother's employment at a certain age daughter is likely to correlate with other time-related confounding factors that also relate to the mother's decision to participate in the labor market, for instance, child interruption. One can argue that, albeit temporary, mothers' employment may likely transmit

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

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 labor market if observed temporary employment reveals the costly nature of working 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 analyzing 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 an intergenerational correlation between those who were growing up in urban and rural may differ. First, in the labor market context, literature (Schaner and Das, 2016; Cameron et al., 2018) shows that, in the last two decades, the opposite trend emerges in rural and urban areas in terms of labor 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 occupational-specific human capital transfer, we could expect stronger intergenerational transmission in a rural area, as most jobs available are in agriculture which did not change much over generation compared to urban areas have more sectoral dynamics.

In urban areas, younger cohorts have higher participation compared to their older counterparts given in their 20s. Meanwhile, in rural areas, younger cohorts (e.g: born in the 1980s) participate less in the labor market compared to their older counterparts (e.g: born in the 1950s) in their 20s. Cameron et al. (2018) argues that the opposite trend arguably could be explained by the lack of jobs available in rural areas to match improved 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 labor market dynamics. As my estimation using the permanent component approach takes into account cohort effects, I expect the estimated intergenerational correlation does not capture this possible job mismatch factor over a generation.

As I argue that role model effect matters, urban and rural differences may relate to rural areas adopting more traditional and practice tight family-knit relationships (Fischer,

1995). This could 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 altogether affects intergenerational correlation, I estimate equation (2) for were in urban and rural samples separately. This framework allows institutional settings to affect differently the socioeconomic aspect 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 to observe 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 internalization for those who live in rural areas compared to urban areas. In other words, an individual lives and is raised in urban areas and possesses more individualistic traits. Consistent with the fact that education access to women has been significantly increased in urban compared to rural areas in the last two decades (Schaner and Das, 2016), the effect of schooling on labor supply is found larger (not shown in the table) in urban areas compared to rural areas which affect 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 rather suggestive than conclusive, as this would be a potential future research avenue.

5.4 Other heterogeneity

Chen and Ge (2018) discusses the possible role of religion that may affect female decision participation. This is to say that some religious beliefs may have similar cultural effects on labor force participation. As we know, female labor force participation is relatively much lower in Muslim countries, except for India who predominantly Hindu. One can hypothesize that being Muslim would strengthen the intergenerational link of female labor force participation since being Muslim affect both mother and daughter's decision to be less likely to participate in the labor market. To test this hypothesis, I modify equation 1 to add a dummy of being Muslim and the interaction of being Muslim and labor force participation. Important to note that around 90% of the respondents were Muslims.

As summarized 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 labor 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

Table 5: Urban vs. Rural and Mother-daughter intergenerational link

	Daughter's employment	
	(1)	(2)
	Rural	Urban
Panel A. No Control		
Mother lifetime empl (cohort)	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 empl (cohort)	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 empl (cohort)	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 mother's level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

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 to determine the transmission of norms or values within the family. Previous literature has inconclusive findings about the relationship between religiosity and labor force participation. Some literature ties specific religions with higher labor 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) suggests that more females adopting a more conservative outlook, in this case, dressing as a Muslim in Bangladesh, will have a negative association with female labor 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. 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 samples identified themselves as religious. Since the question itself is a very sensitive question, it is expected to have such low variation in terms of response. Similar to previous efforts, I then modify equation 1 by introducing a dummy variable that assigns value to 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 that indicates 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 such measurement errors given the degree of sensitivity of the issue. However, as I 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, 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 precisely measure religiosity results due aforementioned issues, these results should be seen as suggestive.

Table 6: Other heterogeneity results

| | Daughter's employment | | |
	(1)	(2)	(3)
Panel A. Religion			
Mother lifetime empl (cohort)	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 empl (cohort)	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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

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 labor supply decisions. First, a mother may directly transmit a specific preference toward work to her daughter. Second, the intergenerational 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 "taste" of being at work requires information on how individuals prefer to be at work compared to other activities such as leisure or homework. The IFLS do not possess direct measures to elicit such preference information. Galassi et al. (2019) use the information on an individual's attitude towards gender role[25] 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 IFLS to construct the disutility of work proxy with the procedure as follows.

First, I gather self-reported job satisfaction information from the labor 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).[26] I argue that this measure of job satisfaction could potentially reveal one's preference for work activity. I acknowledge, however, there are at least three potential issues to utilize such information to proxy works 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, preference 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

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[25]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.

[26]The survey reveals that about 71% of answering respondents felt satisfied with their current job, 12% reported very satisfied, 15% reported dissatisfied and only 1.5% very dissatisfied. Either mother or daughter samples share similar responses.

Table 7: Mother-daugher disutility of work and life-time employment

| | 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 empl (cohort)				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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

on age, type of working status (eg: self-employed, casual, wage worker), income and year of schooling. I estimate this separately for mother and daughter samples. Next, I gather the residual terms, which I use as a proxy to 'disutility of work', that already addressed several concerns raised earlier. This measure of the disutility of work is mean zero by construction and normally distributed. The higher the value represent higher disutility toward work

From Table 7 Column (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 preference to intergenerational correlation I do the following procedures. First, I create an indicator variable that values one if the mother (daughter)'s disutility of work is less than the median of the disutility of work of the mother (daughter)'s group. Finally, I create a dummy variable that indicates mothers and daughters grouped into the same group based on highly disliked work preferences. To test the role of direct transmission of preference toward works, I estimate equation 1 with additional control variables of the high disutility of work. I find that similarity of the disutility of work to be significant and negative to the lifetime employment as expected. However, I find that the size of intergenerational correlation (see Column ())does not change much compared to the baseline estimation (see Table 7 Column (3)). The results suggest that direct transmission of preferences toward work could not explain much intergenerational correlation between mother and daughter.

Table 8: Occupational-specific transfer and intergenerational link

| | Daughter's employment (predicted) | | |
	(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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Sample restricted employed mother-daughter pairs. Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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. Regressions control for covariates including individual characteristics, mother characteristics, and daughter's household characteristics as presented in Table 2.

6.2 Occupation-specific human capital transfer

Parents may transfer occupation-specific human capital. In broader terms, this also includes networking. To test this hypothesis, I follow Galassi et al. (2019) by estimating the equation (3) separately for those who work at the same occupation as the mother and those who work at different occupations, including a pair of mother-daughter who either one of them is not working. In the IFLS, occupation is defined into nine categories: professional, clerical, sales, services, and agricultural as [27].

The results are presented in Table 8. As shown in Column (2), we find that for those who work at the same occupation as the mother, the intergenerational coefficient is larger compared to the daughter who works at 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 point to occupational-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 interact with whether they were in the same occupation. Using neither mother nor daughter working as baseline categories, we could see the sizable size of the intergenerational effect driven by those who work in the same occupation.

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[27]Grouping by industry or sector is also possible. However, first, in IFLS1, the survey does not provide a coded sector. Secondly, I argue that occupation would reflect better similarities of human capital-specific requirements rather than the sector of industries.

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 labor market. On the other hand, community beliefs may also be the reflection of mother participation. So, rather we observe the mother's participation effect, it is driven by community beliefs especially when they grow up.

To test, I estimate equation (2) with additional covariates of the share of older women participating excluding the person itself 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 there are 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 customs *adat* and cultural practice module. A community is defined as a locality that consists of several sub-districts. IFLS asks the community leader[28] about multiple information from public facilities to common practice. This information is available from IFLS2 to IFLS4[29]. 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 of whether society accepts that women are allowed to have a job outside the home. Second, a question of whether women are allowed to set up their 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 as 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 that female samples live in 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 the background community (where the daughter was born) perceived. This result suggests that community norms,

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[28]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

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

Table 9: Peer & community effects and mother-daughter intergenerational link

| | Daughter's employment (predicted) | | |
	(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 mother's level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

or how a society where the female lived, matters a lot for them to adapt their more modern perspectives

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 labor force participation. 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 the 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 between 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 observe their mother's behavior. 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 asks respondents about their mother and daughter's information including employment status. The questionnaire asked, "what is the activity that their mother/ father spent the most". This allows me to construct a larger analyzed sample to estimate intergenerational correlation. In practice, I collect 15 to 65 years old women that can provide their mother's employment information. This approach hence similar to previous studies

alike 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 the opposite one. 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 observed how much the mother was involved in household decision-making and would. Hence, this should be taken as suggestive evidence. I use household decision-making based on time allocation that has been available since IFLS2. The list of 17 items' decisions covers daily chore activities, child care, and to some personal matters (see Figure A1.[30] The survey allows for multiple individuals

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[30]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 socializing, time the wife spends socializing, 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 LFP intergenerational link - permanent component regression

	Son's employment (predicted)		
	(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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Sample is drawn from mother and son pairs in IFLS1 (1993). Dependent variable is son's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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. Regressions control for covariates including individual characteristics, mother characteristics, and son's household characteristics as presented in Table 2.

to be involved in decision-making. Then I measured the share of total household decisions made by the husband's spouse, for both mother's household in 1993 and the daughter's household in 2014.[31] 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 summarizes the result. From the first column of Table 11 Column (1) and (2) it emerges that I find statistically significant evidence that mother's (daughter's) labor force participation has a positive relationship with mother's (daughter's) share in decision-making, as expected. Finally, I do find a positive association between mother and daughter's share of decision-making from the result of the last column of Table 11. This intra-household bargaining power is endogenous to the corresponding mother and daughter's employment. The existence of a positive correlation shows us evidence that daughters observe their mother's gender role behavior. It is also possible that the result is driven by the direct empowerment effect of labor 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 baseline year. I expect the intergenerational correlation remains positive and significant. Furthermore, this test would serve as a heterogeneity check as alternative age groups may

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[31]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 decision made by 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 mother's level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample is drawn from mother and daughter pairs in IFLS1 (1993). Dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion 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.

reflect the timing of exposure to a mother's employment during one childhood.

Table 12 Column (1) and Column (2) summarize 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 lifetime employment approach. Overall, compared with my results in Table 3, my findings hint that exposure timing, in terms of observing the mother's labor market participation, plausibly plays an important role in the daughter's participation in the future. This could be a potential research avenue in the future.

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 this paper, they 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 say, results from married women may also be affected by mother-in-law effects. Hence, I also add control for the spouse's mother's employment status if known in my sample. Recall Figure 2, that due to the sample construction, it is possible to not observe a spouse's maternal employment since they were joiners. 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 significant

statistically. These results are important as they dismiss doubt on whether the results are driven by assortative matching.

We discussed earlier that local labor demand matters as adding province fixed effects alter intergenerational correlation quite significantly. Using province fixed effects, however, let the model be restricted. My next sensitivity test is to modify the estimation model such that I use several labor 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 labor force (in thousand), the log of gross domestic product per capita and the Human Development Index. These characteristics are reported in official statistics from BPS. 12 Column (4) summarizes the result. The results suggest 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 it is to purge 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 already married in 1993. As depicted in 12 Column 5, I find intergenerational correlation remains positive and statistically significant.

My last sensitivity checks, as summarized 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 was 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 the 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.

8 Conclusion

I study the correlation between a mother's labor supply decision during her daughter's childhood and adolescence and her daughter's labor 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). Fur-

Table 12: Robustness check

	(1) Daughter's age in '93 0-19	(2) Daughter's age in '93 7-13	(3) Married sample only	(4) Provinces level covariates	(5) Incl. daughter was married in '93	(6) Self-report mother work
			Daughter's employment			
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 mother's level in parentheses. * p <0.10, ** p <0.05, *** p <0.01. Each column reports separate regression. For Column (1) to (5), dependent variable is daughter's life-time employment estimated from linear predicion of panel fixed effect model using working history module (see equation (2)). Mother's life-time employment also estimated from linear predicion for estimation reported in Column (1) to Column (5) Column (1) reports estimation using sample of daughter's aged 0-40 years old in 1993. Column (2) reports estimation using sample of daughter's 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 labor force (in thousand), Humand Development Index Column (5) reports estimation including daughter who were married already in 1993. Column (6) reports estimation using pool of women individual in IFLS aged 15 to 65 years old. Mothers employmen in Column (6) retrieved from daughter's reports on activities that their mother mostly spent on. Clustered standard error at mother level in Column (1) to Column (5). I use robust standar error in Column (6). Regressions control for covariates including individual characteristics, mother characteristics, and daughter's household characteristics as presented in Table 2.

thermore, 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 focus on married women, this paper extends the analysis to include either un-married or married women.

I use the longitudinal feature of the IFLS to set up a daughter-mother employment cor-relation. After controlling for individual characteristics, my baseline estimation suggests that the likelihood of employment increases by 3.7% if one comes from a working mother family. To put into perspective, this correlation coefficient is equivalent to 2 times addi-tional 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 the occupation-specific human capital transfer and role-model effect as the potential main drivers behind the intergenerational correlation. I observe that daughters that follow a similar occupation as 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' labor supply decisions in the labor market are significantly and positively associated with their own daughter's labor supply decisions. I contribute to the lacking empirical evidence on intergenerational correlation in the female labor supply in developing countries' context, by exploiting the richness of the Indonesian longitudinal survey also known as the IFLS. My findings complement previous works on the importance of the role-model effect and occupational-specific transfer from mother to their daughter. At the same time, my findings contest the idea that only the mother-in-law channel matters in shaping the female labor force participation trend. 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 labor 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. This paper also 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

Table A1: Summary statistic by urban-rural

	0	1	Total
Panel A. Daughter			
Daughter's LFP in 2014	0.472	0.479	0.476
	(0.499)	(0.500)	(0.499)
Lives in urban in 2014	0	1	0.564
	(0)	(0)	(0.496)
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 member 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)
	0	1	Total
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. Sample are daughter who were unmarried, lived with their mother, and aged 2-19 years old.

Table A2: Intergenerational labor force

	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. Sample is drawn IFLS2 (1997) and IFLS5 (2014). Dependent variable is daughter's labor force participation We restrict sample unmarried daughter in 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 household level.

Table A3: Intergenerational life time employment cohort adjusted (1993)

	Age in 1993				
	(0-40)	(2-40)	(2-19)	(7-13)	(5-18)
Panel A. No Control					
Mother lifetime empl (cohort)	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 empl (cohort)	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 empl (cohort)	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. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample is drawn IFLS2 (1997) and IFLS5 (2014). Dependent variable is life time employment estimated from linear predicion of panel fixed effect model. We restrict sample unmarried daughter in 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 household level.

Table A4: Intergenerational labor 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. Sample is drawn IFLS1 (1993) and IFLS5 (2014). We restrict sample unmarried daughter in 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 state level.

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

	(1)	(2)	Age in 2014 (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. Sample is drawn IFLS2 (1997) and IFLS5 (2014). Dependent variable is daughter's labor force participation We restrict sample unmarried daughter in baseline year. Age restriction is indicated by the column title. Regressions control for covariates including individual characteristics, mother characteristics, household characteristics. Covariates include daughter's year of schooling, age, marriage status, has children age 0-5 years old in daughter's household, has household member aged 6-15 years old in daughter's household, daughter's household income in log, daughter's household per capita expenditure in log, dummy of daughter is household head, mother year of schooling, father year of schooling, dummy of staying at the same household as mother. Standard errors are clustered at 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)	In your household, who makes decisions about: (CIRCLE ALL THAT APPLY ON EACH LINE)														
	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

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

How religious are you?