The Effects of Children's Migration on Elderly Parents Left-Behind: Evidence from Indonesia

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Abstract

Population aging, combined with the out-migration of young adults from less-developed areas, are significant demographic shifts occurring throughout much of the developing world. A priori, it is unclear how these two forces will shape the well-being of older dependents left-behind. Some commentators express concern about the negative effects of non-traditional family structures on older dependents (particularly in the absence of public alternatives to family-based care), while others argue that migration provides opportunities for improved well-being for families left-behind. The purpose of this paper is to tackle this empirical puzzle using three waves of recent panel data from the Indonesia Family Life Survey (2000, 2007, 2014), and by employing first-differenced regressions that isolate the effect of adult child's migration on elderly parent's health and mortality status. Preliminary results suggest that adult child's migration improves older parent's physical health (self-rated health and ADL index), but also increases parent's depressive symptomology.

Background and Research Question

In the less-developed countries of Asia, rapid population aging combined with the outmigration of young adults from rural to urban areas raise pertinent questions about the well-being of elderly dependents left-behind. On the one hand, migrant children can boost family income through remittance transfers, and thereby allow elderly dependents to afford better living conditions. On the other hand, prolonged separation from children, and attendant changes in familial responsibilities and care arrangements can cause psychological distress and fatigue among left-behind parents. The lack of adequate social safety nets or alternatives to family care, particularly in rural migrant-sending areas, can further exacerbate the unintended consequences of out-migration. It can create a care vacuum for left-behind aging parents who have functional limitations and do not have geographically proximate children who can address their daily care needs.

It is unclear *a priori* what the net impact on elderly left-behind in migrant-sending households will be, and the few existing causal studies on the subject provide mixed evidence. The purpose of this paper is to address this empirical puzzle using recent panel data from Indonesia – a country with high rates of internal and international migration, a growing elderly population, and a changing health profile – to examine how adult children's migration affects the physical *and* psychological well-being of elderly parents left-behind. One of the primary concerns with studies on migration is self-selection (i.e. the decision to migrate is not random; individuals select into it), which makes it difficult to establish the causal effect on migration on non-migrant family members. This study attempts to address selection issues by exploiting the longitudinal nature of the Indonesia Family Life Survey (IFLS), and by using first-differenced equations to sweep out some of the unobserved effects.

Theory and Prior Research

Modernization and its' effects

Much of the literature on ageing in developing countries reflects an underlying concern about how traditional intergenerational support systems can be sustained given the rapid pace of out-migration. When adult children migrate, the daily lives of parents left-behind are transformed in ways that can negatively impact their welfare. Older individuals who have functional limitations and need daily assistance will have to seek coping mechanisms if their children are not physically close-by to assist them. Older parents will also have to manage the emotional stress that protracted physical separation from children may bring about (see Antman (2010; Antman 2015); Cornwell and Waite (2009)), particularly if the child migrated without proper documentation. They may also have to cope with the rearrangement of familial and work responsibilities that follows, including intensive grandparenting while the adult child is away (Settles et al. 2009), or an increase in time spent on the farm to supplement remittance income (Chang et al. 2011). Moreover, adult children may have limited incentive to return to the place of origin as their opportunities and aspirations are likely to increase following out-migration (United Nations 2002; Van Der Geest et al. 2004). This viewpoint on the consequences of out-migration aligns with the broader argument that the forces of "modernization" will undermine the traditional role of the extended family, and make the growing elderly population more vulnerable (Zimmer et al. 2008; Zimmer & Knodel 2010).

New economics of labor migration

Alternate perspectives depict migration as a positive influence on family members who are left-behind. For example, the *New Economics of Labor Migration* approach (Stark & Bloom 1985) argues that migration is a household level strategy that seeks to diversify or minimize household risk and maximize household income. From this perspective, migration is a source of welfare improvement for older individuals who stay back in places of origin (Stark and Lucas 1988; Osaki 2003; Cai 2003). Correlation-based studies (Adhikari et al. 2011; Lu 2012) and causal studies (Kuhn et al. 2011; Böhme et al. 2015) highlight how children's migration improves non-migrant elderly parents' self-reported health outcomes, nutritional outcomes, and use of healthcare services.

Modified extended family

Another body of literature argues that as societies start to urbanize and family members start to disperse, a modified version of the extended family emerges. According to this perspective, older individuals do not suffer from a lack of physical proximity to children, because advances in communication and transportation technology allow migrant children to maintain contact and regularly visit older parents. As such, migrant family members maintain many of their traditional responsibilities towards older kin, albeit in different forms (Knodel & Saengtienchai 2007). Social support from extended family members following the out-migration of children can also mitigate some of the negative consequences for older individuals left-behind (Lu 2012).

A Sustainable System?

These different perspectives on the link between migration and elderly well-being are not necessarily incompatible. While the extended family may be fulfilling many of its traditional functions while living apart, the sustainability of this system will increasingly come into question as a larger proportion of the elderly population develop activity limitations. In lieu of public alternatives, older individuals will require personal assistance from adult children. How will care be provided in this scenario if there are no children who are geographically proximate? While some of the more immediate care needs can be met by the older individual's spouse, what happens to older individuals if they experience the loss of spousal support due to spouse's ill-health, death, or exit from the union? Even if the older individual has at least one child they can fall back on, how does that child negotiate caregiving responsibilities singlehandedly, particularly if their employment opportunities lie elsewhere? These concerns make the study of elderly well-being in the context of high levels of out-migration even more pertinent (Toyota et al. 2007).

Study Context

Indonesia is one of the largest sources of international migrant labor in the world, sending close to 3 million documented immigrants to Southeast Asian and Middle Eastern countries. This flow of international migrants is compounded by flows of internal migrants from rural areas to urban areas (primarily Jakarta), and by flows undocumented workers particularly to Malaysia. Internal and international migration in Indonesian is mostly economically driven, with migrants sending back a substantial proportion of their earnings as remittances. In the late 1990s, it was estimated that more than 25 percent of rural households in Indonesia relied on migrant labor and income (Hugo 2012). According to the 2010 Indonesian Census, nearly 9.8 million Indonesian individuals were

temporary internal migrants in 2010 (individuals who moved out of the district they were living in 5 years ago).

It is critical to examine the impact of these persistent migration flows on non-migrant elderly in the contemporary Indonesia because these migrant flows are compounded by other key demographic changes. The available number of children to take care of the growing elderly population has been decreasing over time and is expected to continue decreasing over the next few decades (the share of the Indonesian population ages 65 or more increased from 3.6 percent to 5.1 percent between 1980 and 2015, and this share is expected to almost triple by 2050. At the same time, the Indonesian total fertility rate fell from 4.4 in 1980 to 2.4 in 2015, and is expected to decline to 1.9 by 2050 (The World Bank 2015).

Data and Methods

Data for this study come from the 2000, 2007, and 2014 waves of the *Indonesia Family Life Survey* (IFLS). The IFLS is a broadly representative panel survey of individuals, households, and communities in Indonesia. The first round of data was collected in 1993. 7,224 households and 22,347 individuals across 13 provinces were interviewed in the first round. Subsequently, the IFLS was fielded in 1997, 2000, 2007, and 2014, and considerable efforts were made to keep attrition rates low. In fact, with over a 90% follow-up rate of households across all waves, the IFLS is apt for longitudinal analysis as it minimizes data concerns that arise from selective attrition. Furthermore, the IFLS contains detailed data on household economic status, migration histories, and various health indicators, i.e. all the variables of interest for this study (Strauss et al. 2016).

For this analysis, I focus on a subset of IFLS respondents who were age 43 or more in IFLS-2000 (age 50 or more IFLS 2007), who did not have a migrant adult child (age 15 or more) in IFLS-2000, who were alive and successfully followed-up between IFLS-2000 and IFLS-2007, who completed the individual survey in IFLS-2014 or were determined deceased in IFLS-2014, and who did not experience a shift from having at least one migrant adult child in IFLS-2007 to having no migrant adult child in IFLS-2014[1]. Since I do not want the coefficients to be affected by the individual's own migration, I further restrict the analysis to older individuals who did not shift households between these three rounds. The final analytical dataset contains 3,481 observations, and the sub-sample dataset of individuals who survived until IFLS-2014 contains 2,816 observations.

Dependent variables

I use five dependent variables in this analysis:

- Dead in IFLS-2014: This is a binary variable to identify mortality between rounds. If the older individual dies between IFLS-2007 and IFLS-2014, this variable will be coded as 1; if he/she survives between these waves, this variable will be coded as 0

For the sub-sample of older individuals who survive between IFLS-2007 and IFLS-2014, we also use the following dependent variables:

[1] I do not want the coefficients to be affected by return migration between 2007 and 2014

- Change in self-rated health: This is a four-category variable that measures change in the older individual's self-rated health between IFLS-2007 and IFLS-2014 (healthy in both waves; healthy → unhealthy; unhealthy → healthy; unhealthy in both waves). "Healthy in both waves" is the reference category.[2]
- Change in activity limitations: This is a three-category variable that measures change in the number of activity limitations the older individual experiences between IFLS-2007 and IFLS-2014 (# limitations stay the same; # limitations increase; # limitations decrease). The reference category is "# limitations stay the same". Activity limitations (ADL index) measures how many of the following activities the respondent cannot perform independently: carry a heavy load, draw water, walk 5 kilometers, sweep the house floor, bow/squat/kneel, dress without help, stand up from sitting position on a chair, stand up from sitting on the floor, bathe, get out of bed.
- Change in depression score: This is a three-category variable that measures change in the older individual's depression score between IFLS-2007 and IFLS-2014 (score stays the same; score increases (depression increases); score decreases (depression decreases). The reference category is "score stays the same". Depression scores are a composite measure of psychological distress on a continuous scale of 1-4. IFLS respondent adults were asked to rate the frequency with which they experienced 10 different symptoms of distress in the last week on a scale of 1-4 (1 = never or rarely (<=1 day); 2 = some days (1-2 days); 3 = occasionally (3-4 days); 4 = most of the time (5-7 days)). The responses to these 10 items were averaged to achieve a composite score.

Main independent variable

A dummy variable is used to indicate if the older individual has at least one migrant adult (age 15 or over) child in IFLS-2007. A migrant adult child is one who has been living in a different district (or *kabupaten*) than their parent, or living abroad, for at least six months. Districts are used as the administrative boundary to define migration by Kuhn et al. (2011) and by the Indonesian census.

Controls

Individual-level controls:

- Age in IFLS-2007
- Sex (measured in IFLS-2007)
- Education (measured in IFLS-2007): no schooling (reference category), primary, junior high, senior high,
- Change in marital status between IFLS-2007 and IFLS-2014 (in union in IFLS-2014; in union in IFLS-2007 → not in union in IFLS-2014; not in union in IFLS-2007 and IFLS-2014). This control can only be used for the sub-sample of individuals who survive until IFLS-2014. Considering that spousal support is fast becoming the main form of support for older individuals in less-developed areas, I posit that the loss of spousal support will have a negative impact on elderly individual's emotional well-being.

[2] Note that self-rated health is measured as a four-category variable in IFLS-2007 and IFLS-2014, but given the distribution across the four categories, I chose to collapse it into a two-category variable (healthy/unhealthy) for this analysis.

Household-level controls:

- Rural/Urban area (measured in IFLS-2007)
- Log of per-capita household consumption (measured in IFLS-2007). This variable is not available for IFLS-2014, so change in per capita household consumption cannot be computed.

Empirical strategy

The following first-differenced specification is used to examine the impact of adult child's migration on parental health (and mortality status). First differencing sweeps out any unobserved province, household, and individual level fixed factors that may be driving parental health. Further, the specification properly sequences the relationship between (prior) change in child migration status, and (subsequent) change in elderly health. To isolate the effect of child's migration status, I also control for individual and household-level characteristics that can be correlated with change in parental health.

$$\Delta H_{it} = \beta_0 + \beta_1 \Delta Mig_{it-1} + \beta_2 Controls_{it-1} + \beta_3 \Delta Controls_{it} + \varepsilon_{it} \quad (1)$$

ΔH_{it} : measures change in mortality/health status of older individual i between IFLS-2007 and IFLS-2014. When mortality status in IFLS-2014 is used as the dependent variable, I will use a logit regression specification. When any of the other change in health status variables are used as the dependent variable, I will use a multinomial logit regression specification (and the sub-sample of individuals alive in both waves).

ΔMig_{it-1}: dummy variable indicating shift from having no migrant adult child in IFLS-2000, to having a migrant adult child in IFLS-2007

$Controls_{it-1}$: Household and individual-level controls measured in IFLS-2007 (age, sex, rural/urban)

$\Delta Controls_{it}$: Change in marital status between IFLS-2007 and IFLS-2014

Preliminary Results

Tables 1 and 2 in the following pages present some of the preliminary results. Table 1 describes the full sample and sub-sample characteristics. Table 2 looks at whether differences in the dependent variables across child migration status is significant (all the differences are significant). As a next step, I will implement the regressions outlined above. s

Table 1. Sample characteristics		
	Full sample (N=3,481)	Sub-sample of individuals who live until 2014 (N=2,816)
	Mean (S.D.) or Col %	Mean (S.D.) or Col %
% died between 2007 and 2014	19.1	N/A
Change in self-rated health (2007-2014)		
Healthy in 2007 and 2014	N/A	54.7
Healthy → Unhealthy	N/A	26.3
Unhealthy → Healthy	N/A	7.5
Unhealthy in 2007 and 2014	N/A	11.5
Change in ADL (2007-2014)		
Remained same	N/A	36.5
Increased	N/A	52.0
Decreased	N/A	11.6
Change in depression (2007-2014)		
Remained same	N/A	11.2
Increased	N/A	57.9
Decreased	N/A	30.8
% with migrant adult child in 2007	37.1	39.7
Age (measured in 2007)	60.3 (8.56)	59.1 (7.79)
% Female (measured in 2007)*	44.0	47.0
Education (measured in 2007)		
No education	22.5	21.1
Primary	51.7	52.5
Junior high	9.8	9.5
Senior high	10.1	10.4
Tertiary	5.9	6.4
Other	0.1	0.1
Log HH consumption per-capita (measured in 2007)	12.9 (0.69)	12.9 (0.68)
% Rural (measured in 2007)	49.5	50.2
Change in union status (2007-2014)		
In union in 2014	N/A	70.18
In union → Not in union	N/A	10.13
Not in union in 2007 and 2014	N/A	19.69

*****There are fewer women in our analytical sample because more women had a migrant adult child in 2000 and were therefore filtered out of this analysis.

Table 2A. T-test results to compare dependent variable across child migration status in 2007			
	No migrant adult child in 2007	Migrant adult child in 2007	Significant difference?
% died between 2007 and 2014 (using full sub-sample)	22.4	17.8	*

Table 2B. Cross-tabs of change in health status and child migration status in 2007 (row %s) Sub-sample of individuals who survive until 2014		
	No migrant adult child in 2007	Migrant adult child in 2007
Change in self-rated health (2007 -2014)		
Healthy in 2007 and 2014	39.9	60.1
Healthy → Unhealthy	40.8	59.2
Unhealthy → Healthy	35.8	64.2
Unhealthy in 2007 and 2014	33.6	66.4
Change in ADL (2007-2014)		
Remained same	58.8	41.3
Increased	62.5	37.5
Decreased	45.1	54.9
Change in depression (2007-2014)		
Remained same	56.7	43.3
Increased	40.4	59.6
Decreased	55.6	44.4

Chi-2 tests are significant for all cross-tabs.

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