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Intra-generational and Intergenerational Social Mobility: Evidence from Vietnam

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Abstract

This study examines intra-generational and intergenerational mobility of employment and income in Vietnam during the 2004–2014 period. It finds there was high mobility across occupations but less mobility across wage-job employment and economic sectors. Upward labour mobility increased over time because of the increase in skilled occupations. The intergenerational elasticity of earnings is estimated at around 0.36. Education plays an important role in increasing intra-generational as well as intergenerational mobility. The earning intergenerational elasticity for children with less than primary education is rather high, at 0.51, while this intergenerational elasticity for those with a college or university degree is much lower at 0.17.

Keywords

Social mobility, intra-generational mobility, intergenerational mobility, occupational mobility, income mobility, Vietnam

Introduction

Social mobility can refer to movement of individuals and households across different social positions (e.g. Behrman, 2000; Blau and Duncan, 1967; Featherman and Hauser, 1978; Torche, 2015). Social mobility includes intergenerational mobility and intra-generational mobility. Intergenerational mobility is the change of the position of a person or a household as compared with previous generations, while intra-generational mobility is the change of the position of a person or a household over time. Social mobility can be considered and measured in terms of education, employment and income. The movement can be in a downward or upward direction.

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There can be a two-way relationship between social mobility and inequality (e.g. Brunori et al., 2013; Corak, 2013a, 2013b). In a society with high income inequality, there is a large proportion of very rich as well as very poor people. Family background, network and resources are important factors in determining education, health, and future employment and income of children (Corak, 2013a). Children born in a rich family are more likely to be rich, while those born in a poor family are more likely to be poor. High inequality can reduce both intra-generational and intergenerational mobility. The association between intergenerational mobility and inequality is described by the 'Great Gatsby' curve (Corak, 2013b). Countries with high income inequality tend to have higher intergenerational elasticity or low mobility of earnings across the generations.[1] Increasing intra-generational and intergenerational mobility can help reduce inequality and poverty.

Vietnam has achieved high economic growth during the recent decades. Poverty has been significantly decreased over time (e.g. Nguyen and Tran, 2018; World Bank, 2013). The proportion of people below the expenditure poverty line decreased from 58.1% in 1993 to 14.5% in 2008 and to about 8.5% in 2014.[2] However, the poverty rate remains very high in remote and mountainous areas where there is a high proportion of ethnic minorities. In some areas, more than 80% of people live below the poverty line (Lanjouw et al., 2017; Nguyen, 2011). There is a large gap in living standards between urban and rural households as well as between Kinh majority and ethnic minorities.[3] The absolute per capita income gap between urban and rural households increased from 4.8 million VND in 2004 to 6.3 million VND in 2014.[4] The gap between Kinh and ethnic minorities was larger, at around 7 million VND in 2014. Not only the absolute income gap but also the relative income gap increased over time. The ratio of per capita income of Kinh to that of ethnic minorities increased from 2.1 in 2004 to 2.3 in 2014. Increasing social mobility for the poor and disadvantageous population can be an important measure to increase their income and reduce inequality sustainably.

Information on social mobility is useful for designing policies to increase social mobility and improve equality in opportunities and welfare in Vietnam. Thus, this study provides descriptive analysis of the situation and trend of social mobility in Vietnam, and subsequently examines factors associated with social mobility. More specifically, this study has three objectives. The first is to present the descriptive analysis of intra-generational mobility of income and employment mobility in Vietnam. The second is to analyse the intergenerational mobility of employment and earnings. The third is to analyse the association between different factors, especially education, and mobility. Data used in this study are from the Vietnam Household Living Standard Surveys (VHLSSs) in 2004, 2008, 2010 and 2014.

There are a large number of studies on intergenerational mobility (for a review, see e.g. Black and Devereux, 2010; Solon, 2013; Torche, 2015). Most studies focus on analysis in the United States and other high-income countries. There is less empirical evidence for intra-generational as well as intergenerational mobility in low- and middle-income countries, possibly because of less availability of data sets in these countries. In Vietnam, there are two studies which estimate the intergenerational elasticity of education and occupation. Using the 1998 VHLSS, Hertz et al. (2008) estimate the elasticity of education between parents and children at 0.58.[5] Emran and Shilpi (2011) find a high correlation of intergenerational occupation in Vietnam using the 1993 VHLSS. Regarding intra-generational mobility, Brand-Weiner et al. (2015) examine the intra-generational mobility of income and occupation using the VHLSSs in 2004 and 2008. They find rather high income mobility in Vietnam. However, the mobility of employment across sectors (agriculture, service and industry) is small. In addition, several studies look at the poverty transition of households over time (e.g. Baulch and Vu, 2010; Nguyen, 2012; Nguyen et al., 2015). Overall, these studies find ethnic minorities and low education households tend to be more chronically poor than Kinh majority and high-education households.

Compared with previous studies on social mobility in Vietnam, this study has several differences. Firstly, this study examines not only intra-generational mobility, but also intergenerational mobility in both occupational and earning outcomes. Previous studies have looked at either intra-generational mobility or intergenerational mobility. Secondly, we use the most recent VHLSSs from 2004 to 2014 to examine the change in social mobility over time. Hertz et al. (2008) and Emran and Shilpi (2011) use data from the 1993–1998 period. Brand-Weiner et al. (2015) use more recent data from the 2004–2008 period. However, this study does not look at intergenerational mobility. Vietnam is a dynamic country in economic transition, and social mobility can differ significantly over time. Thirdly, using regressions, we are able to investigate the association between several socio-economic factors (education, demography and geography) and social mobility.

The paper is structured into six sections. The second section reviews and discusses a theoretical framework of intra-generational mobility and intergenerational mobility. The third section discusses the data set and estimation method used in this study. Next, the fourth and fifth sections present empirical results of intra-generational and intergenerational mobility in Vietnam, respectively. Finally, the sixth section concludes.

Theoretical framework

Social mobility has received a great deal of attention from sociologists as well as economists (e.g. Becker and Tomes, 1979; Behrman, 2000; Blau and Duncan; 1967; Featherman and Hauser, 1978; Torche, 2015). There are a large number of studies on social mobility, especially intergenerational mobility (for a review, see e.g. Black and Devereux, 2010; Solon, 2013; Torche, 2015). In this study, we examine factors that can influence the intra-generational and intergenerational mobility of different outcomes including income, employment and wages. These outcomes are indicators of the earnings of individuals and families. According to Glewwe (1991) and Ravallion and Walle (2003), the earning function of households depends on several factors including human capital, household composition (demographic variables), assets and geography. Regarding intergenerational mobility, Chetty et al. (2014) find a large geographic variation within the United States. The geographical variation in mobility is correlated with different factors including economic level, education and family structure. Following these related studies, we also look at the role of four factor groups in explaining income and employment mobility in Vietnam (Figure 1).

The most important variable that affects mobility is education. Human capital plays an important role in increasing productivity and economic growth (e.g. Psacharopoulos and Patrinos, 2004; Schultz, 1997, 2002). The association between education and mobility has been well documented in numerous studies (e.g. Plewis and Bartley, 2014; Raaum et al., 2006; Shavit and Blossfeld, 1993; Tran et al., 2018). People with higher education are more likely to experience upward mobility and less likely to experiences downward mobility in employment and economic level.

Family background including demographic characteristics and economic level of households is found to play an important role in intergenerational mobility, especially in high-income countries (e.g. Björklund et al., 2009; Black and Devereux, 2010; Corak, 2013a; Piraino, 2007). In this study, we look at two important aspects of family backgrounds: household composition and assets. Family structure and family size can affect the human capital of children and indirectly influence their mobility (Becker and Lewis, 1973; Becker and Tomes, 1976).

Family resources (asset and economic level) have a strong effect on human capital, networks and employment of children (Corak, 2013a). The importance of investments in childhood education and returns to education has been well documented (e.g. Campbell et al., 2014; Heckman, 2012).

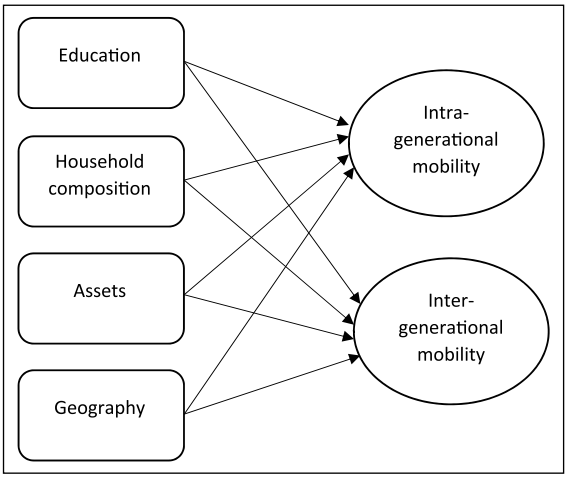

Figure 1. Factors influencing social mobility.
Source: Authors' preparation.

Finally, social mobility differs for different geographical areas (e.g. Bloome, 2014; Torche, 2015). Scandinavian countries have higher mobility than the United States, the United Kingdom and Italy (Torche, 2015). The difference in mobility can be explained by the difference in the economic context (e.g. Bloome, 2014), inequality level (Corak, 2013b; Solon, 2004) and the difference in culture (Bourdieu, 1984; Bourdieu and Passeron, 1977). Within the United States, Chetty et al. (2014) find a large geographic variation in intergenerational mobility.

Data sets and estimation methods

Data sets

This study relies on the VHLSSs in 2004, 2008, 2010 and 2014. The VHLSSs were conducted by the General Statistics Office of Vietnam (GSO) with technical assistances from the World Bank. VHLSSs are conducted by the GSO every two years. In this study, we use the four VHLSSs to analyse the change over 2004–2008 and the change over 2010–2014. The surveys contain household-level and individual-level data. Data include basic demography, employment and labour force participation, education, health, income, expenditure, housing, lands, and participation of households in poverty alleviation programmes.

The number of households sampled in the VHLSSs 2004, 2008, 2010 and 2014 is 9188, 9189, 9399 and 9398, respectively. The number of individuals from these sampled households in the VHLSSs for 2004, 2008, 2010 and 2014 is 40,437, 38,253, 36,999 and 35,520, respectively. The VHLSSs are representative at the urban/rural and regional level. There are panel households (1817 households) between the 2004 VHLSS and the 2008 one. There are also panel households (1813 households) between the 2010 VHLSS and the 2014 one. However, there are no panel data between the 2008 VHLSS and the 2010 one. VHLSSs since 2010 rely a different sample frame (from the 2009 Population and Housing Census). As a result, there are no links between the 2010 VHLSS and the previous VHLSSs.

Estimation methods

In addition to descriptive statistics, we use ordinary least squares (OLS) regression to examine how characteristics of households and individuals are correlated with their mobility. Firstly, we model the intra-generational mobility of income of households as follows:

$$Income_{j,\Delta t} = \beta_0 + Head_{j,t-1}\beta_1 + Household_{j,t-1}\beta_2 + Asset_{j,t-1}\beta_3 + Geography_{j,t-1}\beta_4 + \epsilon_{j,\Delta t}, \quad (1)$$

where $Income_{j,\Delta t}$ is the dependent variable indicating the mobility of household j across income quintiles between years t and $t–1$. As explained in the next section, we measure income mobility by both upward and downward mobility; that is, an increase and a decrease in income between years t and $t–1$. The explanatory variables are measured in the original year; that is, year $t–1$. Following the theoretical framework, the explanatory variables are grouped into four groups: characteristics of household heads (gender, ethnicity, age and education), household composition (household size, the proportion of children and older members in households), assets (lands) and geography (urban and regional dummies).

We use the panel data between the 2004 and 2008 VHLSSs to define the income mobility of households over the 2004–2008 period, and the panel data between the 2010 and 2014 VHLSSs to define the income mobility of households over the 2010–2014 period. There are no panel data between the 2008 and 2010 VHLSSs. Thus, we cannot use panel data techniques such as household fixed-effects or random-effects regressions. Instead, we use OLS regression to estimate model 1.

We also model the intra-generational mobility of employment of individuals using the following regression:

$$Employment_{i,j,\Delta t} = \beta_0 + Characteristics_{i,j,t-1}\beta_1 + Household_{j,t-1}\beta_2 + Asset_{j,t-1}\beta_3 + Geography_{j,t-1}\beta_4 + u_{i,j,\Delta t} \quad (2)$$

where $Employment_{i,j,\Delta t}$ is the dependent variable measuring the employment mobility of individual i in household j over the period t-1 and t. It should be noted that we estimate equation 1 using household-level data and equation 2 using individual-level data. $Characteristics_{i,j,t-1}$ are characteristics of individuals including age, gender, ethnicity and education. Equation 2 also contains household-level control variables. The mobility of employment is defined by the change in employment over the 2004–2008 period and by the change over the 2010–2014 period.

Equations 1 and 2 model the intra-generational mobility. To model the intergenerational mobility, we have to combine data on parents and their children. We first estimate a model of the change in employment between parents and children:

$$Diff\_employment_{i,j} = \beta_0 + Children_{i,j}\beta_1 + Parent_j\beta_2 + Household_j\beta_3 + Asset_j\beta_4 + Geography_j\beta_5 + u_{i,j} \quad (3)$$

where $Diff\_employment_{i,j}$ is the dependent variable indicating the difference in employment between a child i and his/her parent in family j. It should be noted that we limit the sample to those who are living with their parents. In VHLSSs, there are no data on parents of an individual, if the parents are not living with him/her in the same household. Thus each individual is living with at

least one parent. For simplicity, we define a parent as the one who has higher wage; that is, if a mother has higher wages than a father, the mother is defined as the parent and vice versa. We will measure employment by different variables including occupational skills, wage-paying job, and economic sector. Using these variables, we can define upward or downward intergenerational mobility of employment (see the empirical section for detailed definition).

Explanatory variables in equation 3 include characteristics of both individuals and their parents. Other explanatory variables include household composition, assets, and geography of households.

An important issue of analysis of intergenerational mobility is intergenerational correlations of earnings or intergenerational elasticity. In this study, we use OLS regression to estimate the intergenerational elasticity. More specifically, we regress log of annual wages of children on log of annual wages of parents as follows:

$$Log\left(wage_{children}\right) = \alpha + \beta Log\left(wage_{parent}\right) + Age_{children} + Age^2_{children} + \varepsilon \quad (4)$$

The coefficient of log of annual wages of parents is the estimate of the intergenerational elasticity, which measures by how many percent the wages of children change if their parents' wages increase by 1%. The above model is widely used to estimate the intergenerational elasticity of earnings in empirical studies (Black and Devereux, 2010). Since we do not have data on permanent wages in the VHLSSs, we use wages in the year of surveys. To correct for the life-cycle problem, in which wages vary across age, we control age of children in regression. For comparison with other studies on the intergenerational elasticity, we do not control for explanatory variables in equation 4.

Finally, it should be noted that we use OLS regressions to estimate equations from 1 to 4. The effect of explanatory variables in OLS regression can be biased if the explanatory variables are correlated with unobserved variables. Effect estimates of exogenous explanatory variables consisting of age, gender and ethnic minorities are unbiased. However, for endogenous variables such as education, household composition and assets, the estimates can be biased. For these variables, regression results should be interpreted as association instead of the causal effect on mobility.

Intra-generational employment mobility

Income mobility

We first examine mobility of households across economic classes using panel data between the 2004 and 2008 VHLSSs, and between the 2010 and 2014 VHLSSs. As mentioned above, there are no panel data between the 2008 and 2010 VHLSSs. Households are grouped into income quintiles. Table 1 presents the proportion of households who moved up and moved down across income quintiles over the 2010–2014 period. In Table A.1 in the Appendix, we present the analysis of mobility over the 2004–2008 period for comparison. Overall, the mobility trend does not change significantly over time. For example, 45% of households in the bottom quintile in 2004 moved to a higher income quintile in 2008, while this figure was 37% during the 2010–2014 period. To avoid repetition, we use the results of income mobility over the 2010–2014 period for interpretation.

In addition to income mobility from the lowest income quintile to a higher income quintile, Table 1 also presents mobility from the 40% lowest income quintiles to a higher income quintile. We select the two bottom quintiles to examine how households below the average improve their economic position over time. We aim to examine characteristics of people who can move from

Table 1. Income mobility of households over 2010–2014.

Household groups	Upward mobility		Downward mobility		Income change	
	% moving up from the bottom 20% in 2010 to a higher quintile in 2014	% moving up from the bottom 40% in 2010 to a higher quintile in 2014	% moving down from the top 40% in 2010 to a lower quintile in 2014	% moving down from the top 20% in 2010 to a lower quintile in 2014	Absolute change in per capita income 2010 0–2014 (Fields and Ok (1999) index)	Relative change in per capita income 2010–2014
Gender of household head						
Male	40.5	17.8	11.9	43.0	5652.4	61.9
Female	35.1	11.0	11.9	36.6	4257.6	47.8
Age of household head						
Age 15–30	15.6	2.4	16.6	53.0	3440.5	45.5
Age 31–60	39.2	13.2	11.6	37.5	4683.6	51.7
Education of household head						
< Primary	31.4	8.1	19.4	48.2	3355.8	55.6
Primary	34.7	8.5	12.6	58.4	4489.3	60.4
Lower-secondary	46.9	11.9	12.1	38.2	4314.8	50.2
Upper-secondary	42.1	19.7	4.7	31.8	5544.7	54.1
Post-secondary	71.3	22.7	3.8	30.9	6348.2	43.3
Rural/urban						
Rural	35.8	10.9	15.0	44.7	4198.6	54.5
Urban	45.2	17.0	3.3	32.0	5656.3	46.0
Ethnicity of household head						
Kinh	48.7	13.4	9.3	37.9	4964.0	51.2
Ethnic minorities	18.7	5.0	35.7	47.8	2479.9	52.7
Total	36.5	12.6	11.9	38.4	4597.0	51.3

Source: Estimates from Vietnam Living Standard Surveys 2010 and 2014.

poorest and near poorest quintiles to higher quintiles. The trend of income mobility from the 40% lowest quintiles is rather similar to the trend of income mobility from the 20% lowest quintile.

It shows that urban households are more likely to move up than rural households. Kinh and ethnic minorities have a large difference in the mobility rate. Over the 2010–2014 period, around 19% of ethnic minorities in the bottom quintile moved to a higher income quintile, while this figure for Kinh was 49%.

Income mobility of households is correlated with characteristics of household heads. In VHLSSs, household heads are defined as those who have the most power in the household's decisions. Around 22% of households have female heads. However, around two-thirds of female heads are single or divorced. It means that female-headed households tend to have a lower household size and are different from male-headed households. Male-headed households and female-headed ones have different mobility rates. However, the difference is not very large. Over the 2010–2014 period, 35% of female-headed households and 41% of male-headed households escaped from the bottom income quintile.

Income mobility is also correlated with age of household head. Households with young heads are substantially less likely to be mobile than those with older heads. Over the 2010–2014 period, 39% of households with heads aged 31–60 moved from the bottom quintile to a higher quintile, while only 16% of households with heads below the age of 31 moved from the bottom quintile to a higher quintile. Young people have less experience and find it more difficult to achieve upward mobility.

Education plays an important role in obtaining better employment and earnings. The returns to education have consistently been found to be high in both developed and developing countries (Psacharopoulos and Patrinos, 2004; Schultz, 1997, 2002). Table 1 shows the important role of education, especially post-secondary education (college and above) in income mobility. Seventy one percent of households with heads with post-secondary education moved from the bottom to a higher income quintile over the 2010–2014 period. For households with heads with a lower level of education, these corresponding figures are just 31% and 35%.

We also look at the downward mobility from a higher income quintile to lower income quintiles. Households with young heads are more likely to move down. Education plays an important role in reducing the downward mobility of households. Kinh and urban households are less likely to have downward mobility than ethnic minority and rural households.

In the last two columns of Table 1, we estimate the absolute and relative income mobility indexes (Fields and Ok, 1996, 1999). The absolute change index is equal to the average of the absolute difference between the 2010 income and the 2014 income. The relative change index is equal to the average of the absolute change divided by the per capita income in the base year (i.e. 2010 in Table 1).[6] Table 1 shows that female-headed households have lower mobility than male-headed households. Households with young heads are less likely to be mobile than those with older heads. Households with highly educated heads have a higher absolute mobility than those with low education. However, since the base income of households with highly educated heads is higher, their relative mobility is lower.

Table 2 reports OLS regressions of the probability of upward and downward income mobility over the 2010–2014 period (the regression model is presented in equation 1). The regression analysis for the 2004–2008 period is presented in Table A.2 in the Appendix. Unlike the descriptive analysis is Table 1, the regression model reports the partial correlation between an explanatory variable and the dependent variable once other explanatory variables are controlled for. It shows that gender and age of household heads are not strongly correlated with income mobility after other explanatory variables are controlled for. Compared with Kinh, ethnic minorities are more likely to move down but less likely to move up in income mobility. Households with highly educated heads

Table 2. Regression of income mobility of households over 2010–2014.

Explanatory variables	Dependent variables					
	Moving up from the bottom 20% in 2010 to a higher quintile in 2014 (yes = 1, no = 0)	Moving up from the bottom 40% in 2010 to a higher quintile in 2014 (yes = 1, no = 0)	Moving down from the top 40% in 2010 to a lower quintile in 2014 (yes = 1, no = 0)	Moving down from the top 20% in 2010 to a lower quintile in 2014 (yes=1, no=0)	Absolute change in per capita income 2010–2014 (Fields and Ok (1999) index)	Relative change in per capita income 2010–2014
Gender of household head (male = 1, female = 0)	0.0744 (0.0712)	−0.0818** (0.0323)	0.0102 (0.0242)	−0.0923 (0.0690)	−1190.39 (727.91)	−0.1685** (0.0719)
Age of household head	0.0027 (0.0024)	0.0005 (0.0011)	−0.0003 (0.0011)	−0.0039 (0.0034)	−4.90 (14.56)	−0.0013 (0.0022)
Ethnicity of head (Kinh, Hoa = 0, ethnic minorities = 1)	−0.1904*** (0.0701)	−0.0452 (0.0312)	0.2439*** (0.0488)	−0.0783 (0.1512)	−1440.9*** (427.65)	−0.0895 (0.0913)
Household head with educational degree	*Reference*					
Household head with primary education	0.0011 (0.0638)	0.0125 (0.0287)	−0.0321 (0.0316)	0.0916 (0.1267)	950.32 (770.97)	0.0295 (0.0756)
Household head with lower-secondary education	0.1078 (0.0735)	0.0609* (0.0352)	−0.0175 (0.0325)	−0.1144 (0.1081)	705.57 (447.25)	−0.0358 (0.0646)
Household head with upper-secondary education	0.1060 (0.1436)	0.1182** (0.0596)	−0.0770** (0.0371)	−0.1894 (0.1225)	1497.65** (629.51)	−0.0780 (0.0715)
Household head with college or university education	0.2276 (0.1546)	0.1639*** (0.0420)	−0.1086*** (0.0314)	−0.1684 (0.1023)	2,558.29*** (572.05)	−0.1484** (0.0721)
Household size	−0.0193 (0.0170)	0.0201** (0.0097)	−0.0191** (0.0076)	0.0170 (0.0209)	−162.43 (118.18)	0.0205 (0.0140)
Proportion of children below age 15	−0.1223 (0.1389)	−0.1418** (0.0676)	0.0367 (0.0554)	0.0892 (0.1932)	−2,749.3*** (898.67)	−0.1860 (0.1365)
Proportion of members above age 60	−0.3701*** (0.1381)	−0.0862 (0.0539)	0.1863*** (0.0627)	0.2111 (0.1498)	−2,783.0*** (887.03)	−0.1559* (0.0943)
Log of annual crop land	−0.0044 (0.0117)	−0.0043 (0.0040)	−0.0002 (0.0032)	0.0313*** (0.0107)	−59.18 (80.53)	−0.0025 (0.0072)
Log of perennial crop land	0.0124 (0.0085)	−0.0033 (0.0037)	−0.0015 (0.0040)	−0.0129 (0.0107)	−28.50 (78.35)	0.0004 (0.0087)
Urban (urban = 1, rural = 0)	0.0265 (0.1174)	−0.0269 (0.0360)	−0.0665*** (0.0238)	0.0101 (0.0712)	−353.33 (984.89)	−0.0589 (0.0723)
Red River Delta	*Reference*					
North East	−0.2212** (0.1051)	0.0209 (0.0364)	0.0213 (0.0347)	0.1452 (0.0946)	425.61 (567.30)	0.1483 (0.1032)
North West	−0.1416 (0.1257)	−0.0612 (0.0384)	0.0629 (0.0762)	0.1588 (0.2708)	−479.45 (557.96)	0.1337 (0.1380)
North Central Coast	−0.1529 (0.1117)	−0.0013 (0.0359)	0.1188*** (0.0381)	0.2134* (0.1225)	−492.96 (488.69)	0.0729 (0.0748)
South Central Coast	−0.2003* (0.1148)	−0.0098 (0.0352)	0.0748* (0.0430)	0.1144 (0.1129)	−343.29 (543.75)	−0.0795 (0.0592)
Central Highlands	−0.3150*** (0.1154)	0.0560 (0.0563)	0.0791* (0.0462)	−0.0199 (0.0970)	886.50 (727.88)	0.0036 (0.0903)
South East	−0.1365 (0.1414)	0.1366*** (0.0478)	−0.0157 (0.0244)	0.0340 (0.0817)	2,717.99** (1,151.56)	0.0998 (0.0811)
Mekong River Delta	0.0163 (0.1114)	0.0310 (0.0366)	0.0328 (0.0278)	−0.0482 (0.0811)	559.60 (602.11)	0.0117 (0.0652)
Constant	0.5351*** (0.1784)	0.0683 (0.0814)	0.1709** (0.0756)	0.5565** (0.2259)	6,403.48*** (1,515.47)	0.8131*** (0.1667)
Observations	403	1,084	1,084	326	1,813	1,813
R-squared	0.177	0.078	0.136	0.120	0.045	0.018

Robust standard errors in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.
Source: Estimates from Vietnam Living Standard Surveys 2010 and 2014.

are more likely to move up and less likely to move down. They are also more mobile than households with heads with a lower level of education.

Interestingly, household composition is also correlated with income mobility. Households with more children and more elderly people tend to have lower income mobility. They are less likely to move up to a higher quintile, but more likely to move down to a lower income quintile. Clearly, more dependants create more burdens for households to increase their income. Agricultural land is not important for income mobility. Having more land might restrict households to agricultural production, and they are less likely to move.

There are no large differences in income mobility between urban and rural households. Regarding the regional variables, households in South East – the richest region in Vietnam – have the highest income mobility than household in other regions.

Employment mobility

In this section, we examine the intra-generational mobility of employment of individuals. We look at three aspects of employment including occupational skills, wage jobs and employment sectors. The definition of occupational skills is similar to Brand-Weiner et al. (2015). The categories are unskilled manual, skilled manual (e.g. craft and related trades workers, machine operators) and non-manual (e.g. service and sales workers, technicians, managers). Non-manual occupation is considered as highly skilled. Table 3 shows that the share of unskilled workers decreased remarkably over time. The proportion of individuals aged 15–60 in unskilled employment was 72.3% in 2004 and 44.9% in 2014. The share of self-employed workers decreased from 66.5% in 2004 to 57.0% in 2014. The share of wage workers increased over time, indicating the expansion of the formal sector. The employment sector is classified into agriculture, industry and services. Workers in the agricultural sector tend to have lower skills and income than workers in the other two sectors. Over the 2004–2014 period, the number of agricultural workers decreased, and they moved to the service and industrial sectors. The share of workers by employment sectors for different population subgroups in 2014 is presented in Table A.3 in the Appendix.

Figure 2 presents the occupational mobility from unskilled to skilled and manual occupations over time (defined using panel data of VHLSSs). Among the unskilled workers in 2004, 17% of them became skilled or non-manual workers in 2008. The upward mobility of occupation increased over the period 2010–2014. Twenty-four percent of the unskilled workers in 2010 had a skilled manual or non-manual occupation in 2014. Occupational mobility increased for all the population subgroups including ethnic minorities, Kinh majority, urban and rural people, male and female, young and older, and people with different education levels. However, there is a large gap in occupational mobility between urban and rural people, between Kinh and ethnic minority people, and between people with different education levels. Having high education plays an important role to change from unskilled to skill jobs.

In Table 4, we analyse employment mobility over the 2010–2014 period in more detail. The analysis of employment mobility over the 2004–2008 period is presented in Table A.4 in the Appendix. It shows that 23.6% of unskilled workers in 2010 found skilled or non-manual jobs in 2014. However, there was also downward mobility: 19.7% of skilled and non-manual workers in 2010 had unskilled jobs in 2014. The movement between self-employed work and wage work and between farm and non-farm sectors was quite low.

There are only small differences in employment mobility between men and women. Regarding age, young people had higher movement from self-employed to employed employment, and lower movement from employed to self-employed employment than older people. Having a higher level of education helps people find a skilled or non-manual job and reduce the downward change from

Table 3. Employment of individuals aged 15–60 over time.

Years	Occupation			Employment		Sector		
	Unskilled manual	Skilled manual	Non-manual	Self-employed	Wage earner	Agriculture	Industry	Service
2004	72.3	15.2	12.5	66.5	33.5	52.7	19.8	27.6
2008	64.6	20.1	15.3	63.5	36.5	49.4	22.1	28.6
2010	48.1	26.8	25.1	60.5	39.5	42.9	25.5	31.6
2014	44.9	28.8	26.3	57.0	42.2	43.0	24.7	32.1

Source: Estimates from pooled data of Vietnam Living Standard Surveys 2004, 2008, 2010 and 2014.

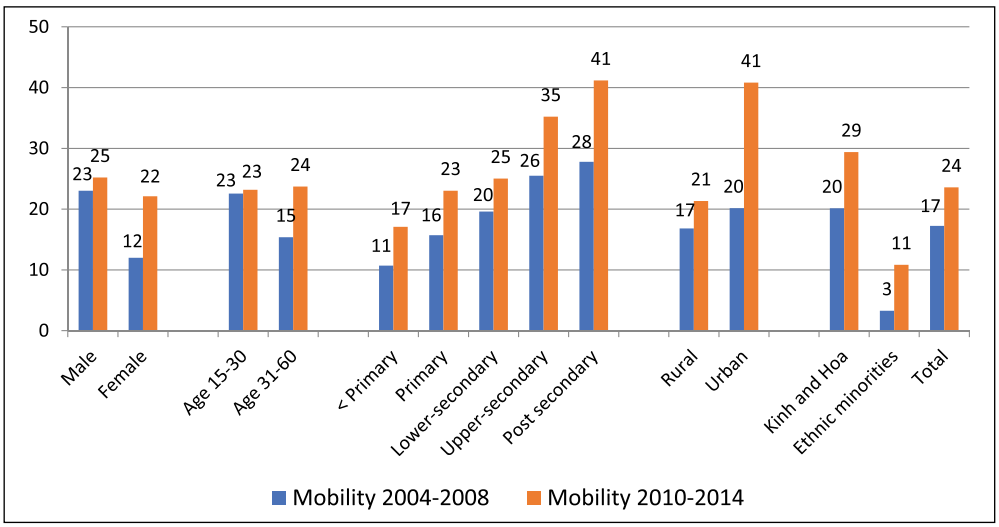

Figure 2. The percentage of people moving from unskilled to skilled occupations.
Source: Estimates from VHLSSs.

a skilled to an unskilled job. Rural people and ethnic minority people are less likely to move up but more likely to move down in employment than urban and Kinh people.

Table 5 presents the regressions of mobility of occupation over the 2010–2014 period. The dependent variables include the change in occupation, employment status and economic sectors. The analysis of the 2004–2008 period is presented in Table A.5 in the Appendix. It shows that men are less likely to move down from skilled and non-manual occupation to unskilled occupation than women. They are more likely to move from self-employed to employed (wage) work than women.

Age is not correlated with occupation movement. However, there is a negative relationship between age and the probability of moving from self-employed to wage jobs. As age increases, the probability of moving from self-employed to wage jobs decreases at a decreasing rate.

Education plays an important role in labour mobility from unskilled to skilled employment. Compared with people without education, having a college or university degree increases the probability of moving up from unskilled to skilled or non-manual occupation by 0.19. It also reduces the probability of moving down from skilled and manual occupation to unskilled occupation by 0.23.

Table 4. Employment mobility of individuals over 2010–2014.

Groups	Occupation mobility		Wage-job mobility		Sector mobility	
	% moving up from unskilled to skilled and non-manual	% moving down from skilled and non-manual to unskilled	% moving from self-employed to wage jobs	% moving from wage jobs to self-employed	% moving from agricultural to non-agricultural	% moving from non-agricultural to agricultural
Gender						
Male	25.20	17.01	21.06	19.30	14.65	15.73
Female	22.11	22.97	12.71	22.32	14.35	17.53
Age						
Age 15–30	23.18	15.08	30.64	13.54	16.85	13.28
Age 31–60	23.72	21.15	12.97	23.86	13.82	17.80
Education						
less than primary education	17.08	34.24	14.28	24.43	9.03	32.52
Primary	23.04	29.90	17.11	28.89	12.38	20.71
Lower-secondary	25.03	24.28	17.84	24.41	19.83	22.97
Upper-secondary	35.22	16.33	14.99	18.58	22.44	8.51
Post-secondary	41.18	5.45	12.82	9.75	16.26	4.61
Rural/urban						
Rural	21.34	25.95	17.63	23.94	13.89	24.55
Urban	40.82	9.74	10.51	12.94	21.72	4.76
Ethnicity						
Kinh	29.38	18.75	15.20	18.77	17.25	13.21
Ethnic minorities	10.84	37.12	19.92	31.10	8.09	57.29
Total	23.58	19.69	16.23	20.43	14.49	16.55

Source: Estimates from Vietnam Living Standard Surveys 2010 and 2014.

Education is less correlated with the employment and sector movement. The regression results show that education is not correlated with the movement from self-employed to employed works as well as the movement from agricultural to non-agricultural work. However, a high level of education reduces the downward movement from employed to self-employed work and from non-agricultural to agricultural work.

Overall, household composition such as household size and age structure of household members is not correlated with the employment mobility of household members. However, having more agricultural land increases the movement from employed to self-employed work and the movement from non-agricultural to agricultural work. Urban and regional variables also matter in mobility of employment, especially the mobility between agricultural and non-agricultural sectors.

Intergenerational mobility

Intergenerational employment mobility

In this section, we analyse the intergenerational mobility of employment; that is, a correlation between parents' employment and children's employment. We use the sample of children and parents who are still working and living in the same family. The children are aged from 15 to 60. We

Table 5. Regression of employment mobility of individuals over 2010–2014.

Explanatory variables	Dependent variables					
	Moving up from unskilled to skilled and non-manual (yes = 1, no = 0)	Moving down from skilled and non-manual to unskilled (yes = 1, no = 0)	Moving from self-employed to wage jobs (yes = 1, no = 0)	Moving from wage jobs to employed (yes = 1, no = 0)	Moving from agricultural to non-agricultural (yes = 1, no = 0)	Moving from non-agricultural to agricultural (yes = 1, no = 0)
Male = 1, female = 0	0.0214 (0.0227)	−0.0625*** (0.0192)	0.0842*** (0.0198)	−0.0554** (0.0239)	0.0111 (0.0190)	−0.0247 (0.0165)
Age	−0.0021 (0.0066)	−0.0086 (0.0086)	−0.0183*** (0.0064)	−0.0124 (0.0094)	0.0050 (0.0057)	−0.0159** (0.0076)
Age squared	0.0000 (0.0001)	0.0001 (0.0001)	0.0001* (0.0001)	0.0003** (0.0001)	−0.0001* (0.0001)	0.0003** (0.0001)
Ethnic minorities (yes = 1, Kinh, Hoa = 0)	−0.0624 (0.0457)	0.1356** (0.0602)	0.0386 (0.0412)	0.0223 (0.0415)	−0.0249 (0.0324)	0.2369*** (0.0582)
Having no educational degree	*Reference*					
Having primary education	0.0207 (0.0272)	−0.0072 (0.0534)	0.0002 (0.0275)	0.0640 (0.0429)	0.0009 (0.0218)	−0.0655* (0.0379)
Having lower-secondary education	0.0553* (0.0324)	−0.0896* (0.0536)	0.0066 (0.0296)	0.0012 (0.0419)	0.0427 (0.0270)	−0.0646 (0.0410)
Having upper-secondary education	0.1331** (0.0558)	−0.1322** (0.0605)	−0.0558 (0.0366)	−0.0217 (0.0531)	0.0523 (0.0429)	−0.1508*** (0.0433)
Having college or university education	0.1919*** (0.0672)	−0.2303*** (0.0512)	−0.0340 (0.0368)	−0.1145*** (0.0410)	0.0212 (0.0508)	−0.1960*** (0.0410)
Household size	−0.0076 (0.0084)	0.0003 (0.0105)	−0.0196*** (0.0069)	0.0063 (0.0087)	−0.0030 (0.0062)	−0.0161** (0.0076)
Proportion of children below age 15	0.0622 (0.0661)	0.0441 (0.0687)	−0.0685 (0.0562)	−0.0070 (0.0663)	−0.0790 (0.0527)	0.0582 (0.0575)
Proportion of members above age 60	−0.0170 (0.1017)	0.0027 (0.0978)	−0.1122 (0.0770)	0.1649 (0.1034)	0.0005 (0.0954)	0.1431 (0.0882)
Log of annual crop land	−0.0056 (0.0057)	0.0170*** (0.0046)	0.0017 (0.0038)	0.0092** (0.0045)	−0.0115*** (0.0036)	0.0196*** (0.0039)
Log of perennial crop land	0.0014 (0.0042)	0.0147** (0.0062)	−0.0037 (0.0034)	0.0129*** (0.0049)	0.0008 (0.0030)	0.0165** (0.0064)
Urban (urban = 1, rural = 0)	0.1252* (0.0661)	−0.0023 (0.0318)	−0.0564* (0.0339)	−0.0033 (0.0335)	0.0047 (0.0550)	−0.0232 (0.0245)
Red River Delta	*Reference*					
North East	−0.0801 (0.0489)	−0.0370 (0.0365)	−0.0746* (0.0415)	0.0612 (0.0471)	−0.1994*** (0.0469)	0.0112 (0.0343)
North West	−0.0840 (0.0560)	−0.1252*** (0.0464)	−0.1495** (0.0592)	0.0316 (0.0562)	−0.2548*** (0.0476)	0.2584*** (0.0755)
North Central Coast	0.0934* (0.0512)	−0.0223 (0.0512)	−0.0186 (0.0423)	0.0455 (0.0424)	−0.1237** (0.0478)	−0.0286 (0.0377)
South Central Coast	0.1258* (0.0654)	−0.0746** (0.0376)	0.0256 (0.0451)	−0.0545 (0.0371)	−0.1248** (0.0547)	−0.0625** (0.0265)
Central Highlands	−0.0654 (0.0623)	0.0264 (0.0637)	−0.0123 (0.0521)	0.1496** (0.0593)	−0.2627*** (0.0504)	0.0687 (0.0454)
South East	0.1997*** (0.0722)	−0.0638 (0.0388)	0.0079 (0.0450)	−0.0109 (0.0397)	−0.1802*** (0.0551)	−0.0322 (0.0281)
Mekong River Delta	0.0488 (0.0562)	−0.0505 (0.0424)	−0.0353 (0.0369)	−0.0567 (0.0431)	−** (0.04350.1844*)	−0.0334 (0.0365)
Constant	0.2806** (0.1401)	0.4035** (0.1628)	0.7811*** (0.1448)	0.2440 (0.1809)	0.4182*** (0.1315)	0.4624*** (0.1446)
Observations	1,618	1,434	1,721	1,331	1,512	1,540
R-squared	0.105	0.134	0.086	0.123	0.083	0.246

Robust standard errors in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.
Source: Estimates from Vietnam Living Standard Surveys 2010–2014.

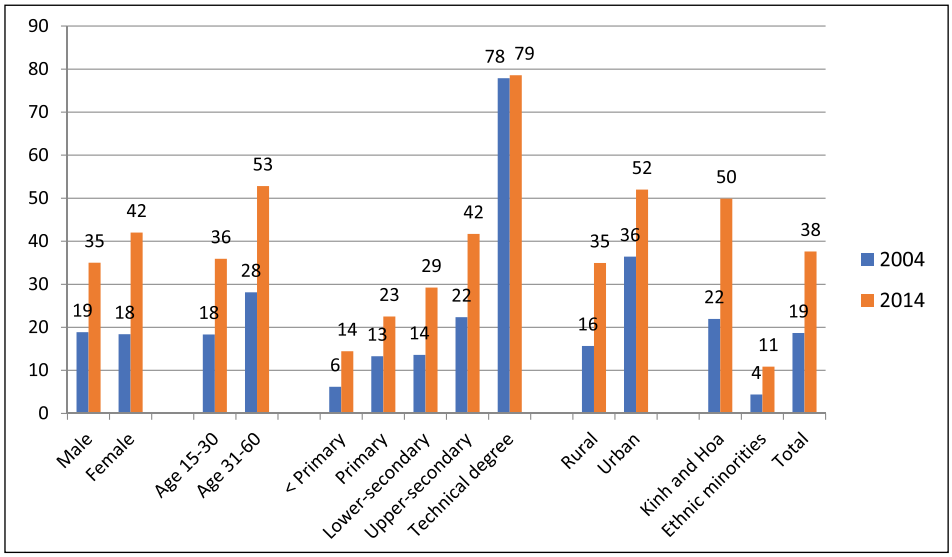

Figure 3. Upward intergenerational mobility from unskilled parents to skilled children (in %).
Source: Estimates from VHLSSs 2004 and 2014.

define 'parent' as the one who has higher wages; that is, if a mother has higher wages than a father, the mother is defined as the parent and vice versa.

Figure 3 shows that in 2004, among children who had a parent with an unskilled occupation, 19% of them were able to find skilled or non-manual jobs. In other words, 81% of children had an unskilled occupation like their parents. Occupation mobility greatly improved in 2014. Thirty-eight percent of children with unskilled parents found a skilled or non-manual occupation. One reason for this upward mobility is the increase in skilled and non-manual employment over the 2004–2014 period.

Upward occupational mobility is higher for female and older people than for male and younger people. Education plays an important role in improvement in intergenerational mobility of occupational skills. Eighty percent of people with a college or university degree whose parents are unskilled, have a skilled or non-manual occupation. Urban and Kinh people are more likely to have a skilled and non-manual occupation than rural and ethnic minorities.

Table 6 presents the intergenerational mobility of employment in 2014 by different types of employment and difference characteristics of individuals. This table presents not only upward but also downward intergenerational mobility of employment. The analysis of intergenerational employment mobility in 2004 is presented in Table A.6 in the Appendix.

It shows that 27.7% of children with parents in skilled or non-manual jobs had an unskilled occupation. This is regarded as downward intergenerational mobility. This downward rate is very high for ethnic minorities. Sixty-seven percent of ethnic minority children had unskilled occupations though their parents had skilled or non-manual occupations. Kinh and urban people, especially those with a high level of education, have a low rate of intergenerational skill downward.

Over time, there has been an expansion in the formal sector as well as the non-farm sector. The proportion of wage workers and non-agricultural workers tends to increase over time. In 2014, 44.9% of children with self-employed parents found wage jobs. On the other hand, around 22% of children with parents in wage jobs were self-employed workers. Intergenerational movement from

Table 6. Intergenerational mobility of employment in 2014.

Characteristics of children	% with skill upward: skilled children and unskilled parents	% with skill downward: unskilled children and skilled parents	% with wage-job upward: wage-job children and self-employed parents	% with wage-job downward: self-employed children and wage-job parents	% with sector upward: non-agricultural children and agricultural parents	% with sector downward: agricultural children and non-agricultural parents
Gender						
Male	35.02	30.14	44.12	20.27	40.05	13.84
Female	42.02	23.97	46.13	24.84	45.44	13.76
Age						
Age 15–30	35.92	28.84	43.66	22.60	40.39	14.32
Age 31–60	52.81	17.69	55.11	16.13	57.81	9.82
Education						
less primary education	14.43	41.38	30.38	21.18	19.76	17.88
Primary	22.51	44.71	37.08	17.04	29.25	14.80
Lower-secondary	29.22	43.71	30.74	39.71	31.56	25.86
Upper-secondary	41.71	29.06	43.64	25.20	50.51	16.78
Post-secondary	78.58	8.42	73.57	10.16	76.91	4.82
Rural/urban						
Rural	34.94	36.17	41.03	26.20	40.52	21.52
Urban	51.99	12.22	59.63	14.17	53.24	3.87
Ethnicity						
Kinh	49.91	23.47	54.52	19.54	54.87	11.95
Ethnic minorities	10.86	67.47	17.77	45.43	14.82	45.33
Total	37.62	27.68	44.89	22.02	42.02	13.80

Source: Estimates from Vietnam Living Standard Survey 2014.

agricultural to non-agricultural sectors is higher than intergenerational movement from non-agricultural to agricultural sectors.

Table 7 presents the OLS regression of intergenerational employment mobility using pooled samples of VHLSSs 2004, 2008, 2010 and 2014. It shows that men are less likely to have upward intergenerational mobility and more likely to have downward intergenerational mobility than women. There is an inverted-U shape between upward intergenerational mobility and age. As age increases, the probability of having a better job than one's parents increases. However, after achieving a peak, the probability of having a better job than one's parents decreases with age.

Ethnic minorities have a lower probability of upward intergenerational mobility but a higher probability of downward intergenerational mobility than Kinh people. Education plays an important role in intergenerational employment. Having a collge or university degree improves intergenerational employment substantially more than having lower educational degrees.

Intergenerational elasticity

We estimate intergenerational elasticity using equation 4 and pooled data from VHLSSs 2004, 2008, 2010 and 2014. Figures 4–6 present estimates of the intergenerational elasticity or the intergenerational coefficient for different groups of people.

Figure 4 presents the intergenerational elasticity between fathers and sons/daughters and the intergenerational elasticity between mothers and sons/daughters. It shows that intergenerational elasticity is quite similar between different pairs of parents and children. However, intergenerational elasticity is higher between parents and sons than between parents and daughters. It means that girls tend to have higher income mobility than boys.

In Figure 5, we estimate the intergenerational elasticity of children's wages with respect to the parent who earns a higher wage. The intergenerational elasticity is 0.36, which implies that if the parents' wage increases by 1%, their children's wage increases by 0.36%. The higher value of intergenerational elasticity means the low intergenerational mobility. This value is similar to several countries such as Germany and Japan, but lower than France, the United Kingdom and the United States, and higher than Canada, Australia and the Nordic countries (according to the estimates in Blanden, 2013; Corak, 2013a). Vietnam also has a lower intergenerational elasticity than several middle-income countries such as China (0.62 according to Gong et al., 2012), Brazil (0.58 according to Ferreira and Veloso, 2006) and Malaysia (0.54 according to Grawe, 2004).

Figure 5 also shows that intergenerational mobility was slightly higher in 2014 than in 2004. Intergenerational mobility is higher for urban and Kinh people than for rural and ethnic minority people.

Figure 6 shows higher intergenerational mobility for women than for men. The intergenerational elasticity is very similar between young and older people. Figure 6 shows the important role of education in improving intergenerational mobility. Intergenerational elasticity for children with less than primary education and those with a college or university degree is 0.51 and 0.17, respectively. It indicates that compared with highly educated people, the wages of people with a lower level of education are more likely to depend on the wages of their parents.

Conclusion

In this study, we examine intra-generational and intergenerational mobility of employment and income in Vietnam over the 2004–2008 and 2010–2014 periods. We find rather high mobility across income quintiles. Forty-five percent of households in the bottom quintile in 2004 moved to a higher income quintile in 2008. The income mobility tended to decrease over time. Thirty-seven

Table 7. Regression of intergenerational employment mobility.

Explanatory variables	Dependent variables					
	Skill upward: skilled children and unskilled parents (yes = 1, no = 0)	Skill downward: unskilled children and skilled parents (yes = 1, no = 0)	Wage-job upward: wage-job children and self-employed parents (yes = 1, no = 0)	Wage-job downward: self-employed children and wage-job parents (yes = 1, no = 0)	Sector upward: non-agricultural children and agricultural parents (yes = 1, no = 0)	Sector downward: agricultural children and non-agricultural parents (yes = 1, no = 0)
Male=1, female = 0	−0.0263*** (0.0080)	0.0241** (0.0114)	0.0210** (0.0087)	−0.0522*** (0.0127)	−0.0394*** (0.0092)	0.0006 (0.0091)
Age	0.0400*** (0.0056)	−0.0837*** (0.0119)	0.0585*** (0.0071)	−0.0986*** (0.0143)	0.0590*** (0.0072)	−0.0830*** (0.0094)
Age squared	−0.0006*** (0.0001)	0.0015*** (0.0002)	−0.0011*** (0.0001)	0.0019*** (0.0003)	−0.0009*** (0.0002)	0.0015*** (0.0002)
Ethnic minorities (yes = 1, Kinh, Hoa = 0)	−0.1128*** (0.0121)	0.1838*** (0.0317)	−0.1522*** (0.0165)	0.0507* (0.0285)	−0.1702*** (0.0159)	0.1543*** (0.0340)
Having no educational degree	*Reference*					
Having primary education	0.0670*** (0.0118)	−0.1158*** (0.0361)	0.0329* (0.0172)	0.0273 (0.0224)	0.0929*** (0.0143)	−0.0680*** (0.0240)
Having lower-secondary education	0.0899*** (0.0130)	−0.1324*** (0.0360)	0.0202 (0.0182)	0.1064*** (0.0257)	0.1156*** (0.0157)	−0.0526** (0.0247)
Having upper-secondary education	0.1446*** (0.0169)	−0.1800*** (0.0371)	0.0546*** (0.0210)	0.0663** (0.0297)	0.1530*** (0.0195)	−0.0684*** (0.0259)
Having collegeor university education	0.5079*** (0.0181)	−0.3592*** (0.0356)	0.3227*** (0.0221)	−0.1322*** (0.0282)	0.4229*** (0.0199)	−0.1519*** (0.0252)
Gender of parent (father = 1, mother = 0)	−0.0201* (0.0118)	0.0277 (0.0199)	−0.0512*** (0.0140)	0.0245 (0.0192)	−0.0235* (0.0142)	0.0113 (0.0124)
Age of parent	−0.0019 (0.0092)	0.0003 (0.0202)	−0.0119 (0.0112)	−0.0144 (0.0171)	−0.0111 (0.0109)	−0.0090 (0.0137)
Age of parent squared	0.0000 (0.0001)	−0.0000 (0.0002)	0.0001 (0.0001)	0.0002 (0.0002)	0.0001 (0.0001)	0.0001 (0.0001)
Parent with educational degree	*Reference*					
Parent with primary education	0.0303*** (0.0115)	0.0367 (0.0247)	−0.0024 (0.0138)	0.0582*** (0.0214)	0.0153 (0.0140)	0.0148 (0.0175)
Parent with lower-secondary degree	0.0430*** (0.0136)	0.0051 (0.0250)	−0.0105 (0.0155)	0.0817*** (0.0245)	0.0137 (0.0161)	0.0456** (0.0188)
Parent with upper-secondary degree	0.0228 (0.0241)	−0.0128 (0.0290)	−0.0221 (0.0274)	0.1315*** (0.0318)	0.0139 (0.0280)	0.0460** (0.0223)
Parent with college or university education	0.0494** (0.0227)	0.0161 (0.0262)	−0.0759*** (0.0229)	0.1214*** (0.0263)	0.0344 (0.0264)	0.0743*** (0.0206)
Household size	−0.0008 (0.0031)	−0.0025 (0.0053)	0.000 (0.00327)	0.0109** (0.0053)	0.0014 (0.0036)	0.0038 (0.0040)
Proportion of children below age 15	−0.0267 (0.0342)	0.0623 (0.0592)	−0.1207*** (0.0425)	−0.0355 (0.0573)	−0.1015** (0.0418)	0.0481 (0.0437)
Proportion of members above age 60	0.0528 (0.0627)	0.0089 (0.0845)	−0.0381 (0.0662)	−0.0523 (0.0994)	−0.0564 (0.0702)	−0.0345 (0.0666)
Log of annual crop land	−0.0030** (0.0015)	0.0152*** (0.0027)	−0.0097*** (0.0020)	0.0197*** (0.0026)	−0.0084*** (0.0019)	0.0194*** (0.0022)

(Continued)

Table 7. (Continued)

Explanatory variables	Dependent variables					
	Skill upward: skilled children and unskilled parents (yes = 1, no = 0)	Skill downward: unskilled children and skilled parents (yes = 1, no = 0)	Wage-job upward: wage-job children and self-employed parents (yes = 1, no = 0)	Wage-job downward: self-employed children and wage-job parents (yes = 1, no = 0)	Sector upward: non-agricultural children and agricultural parents (yes = 1, no = 0)	Sector downward: agricultural children and non-agricultural parents (yes = 1, no = 0)
Log of perennial crop land	−0.0051*** (0.0013)	0.0049* (0.0027)	−0.0113*** (0.0016)	0.0222*** (0.0032)	−0.0083*** (0.0016)	0.0174*** (0.0029)
Urban (urban = 1, rural = 0)	0.0336* (0.0190)	−0.0120 (0.0218)	−0.0116 (0.0212)	0.0480** (0.0191)	0.0629** (0.0250)	−0.0327** (0.0133)
Red River Delta	*Reference*					
North East	−0.1652*** (0.0192)	0.0751*** (0.0258)	−0.1746*** (0.0197)	0.1775*** (0.0298)	−0.2347*** (0.0210)	0.1119*** (0.0224)
North West	−0.1824*** (0.0199)	0.1864*** (0.0444)	−0.2094*** (0.0225)	0.3084*** (0.0515)	−0.2574*** (0.0239)	0.0208 (0.0533)
North Central Coast	−0.1989*** (0.0195)	0.2184*** (0.0270)	−0.1941*** (0.0202)	0.2158*** (0.0291)	−0.2605*** (0.0224)	0.2164*** (0.0238)
South Central Coast	−0.0607*** (0.0231)	−0.0223 (0.0213)	−0.0313 (0.0235)	0.0191 (0.0246)	−0.1121*** (0.0266)	0.0567*** (0.0186)
Central Highlands	−0.1895*** (0.0239)	0.2782*** (0.0339)	−0.1838*** (0.0238)	0.0862** (0.0394)	−0.3025*** (0.0271)	0.1394*** (0.0317)
South East	−0.0348 (0.0228)	−0.0457** (0.0226)	−0.0248 (0.0257)	−0.0388* (0.0222)	−0.1004*** (0.0276)	0.0074 (0.0144)
Mekong River Delta	−0.1427*** (0.0192)	0.0500** (0.0225)	−0.1298*** (0.0195)	−0.0079 (0.0237)	−0.1790*** (0.0214)	0.0481*** (0.0172)
Dummy year 2004	*Reference*					
Dummy year 2008	0.0434*** (0.0106)	−0.0662*** (0.0216)	0.0220 (0.0134)	−0.0270 (0.0190)	0.0293** (0.0129)	−0.0042 (0.0143)
Dummy year 2010	0.1154*** (0.0129)	−0.1228*** (0.0205)	0.0396*** (0.0141)	−0.0221 (0.0195)	0.0320** (0.0147)	−0.0328** (0.0149)
Dummy year 2014	0.1321*** (0.0137)	−0.1279*** (0.0205)	0.0547*** (0.0152)	−0.0646*** (0.0197)	0.0395** (0.0156)	−0.0374*** (0.0138)
Constant	−0.2872 (0.2175)	1.5431*** (0.4735)	0.0301 (0.2674)	1.5362*** (0.3937)	−0.0216 (0.2599)	1.4027*** (0.3261)
Observations	12,268	6,082	13,387	4,963	11,629	6,721
R-squared	0.308	0.267	0.224	0.229	0.276	0.235

Robust standard errors in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.
Source: Estimates from Vietnam Living Standard Surveys 2004, 2008, 2010 and 2014.

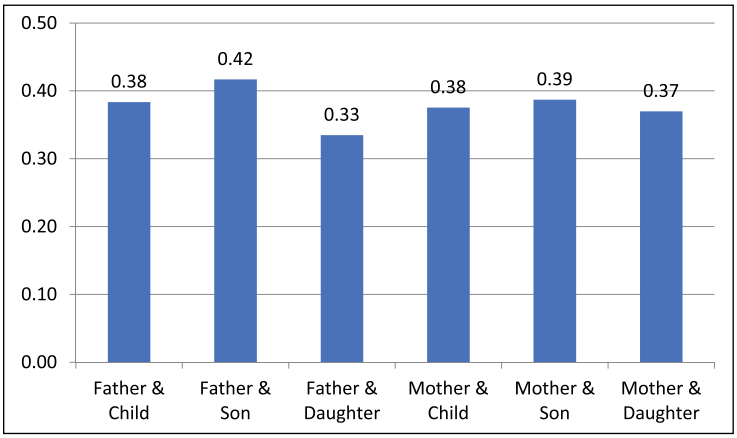

Figure 4. Intergenerational elasticity between father, mother and son, daughter.
Source: Estimates from VHLSSs 2004, 2008, 2010 and 2014.

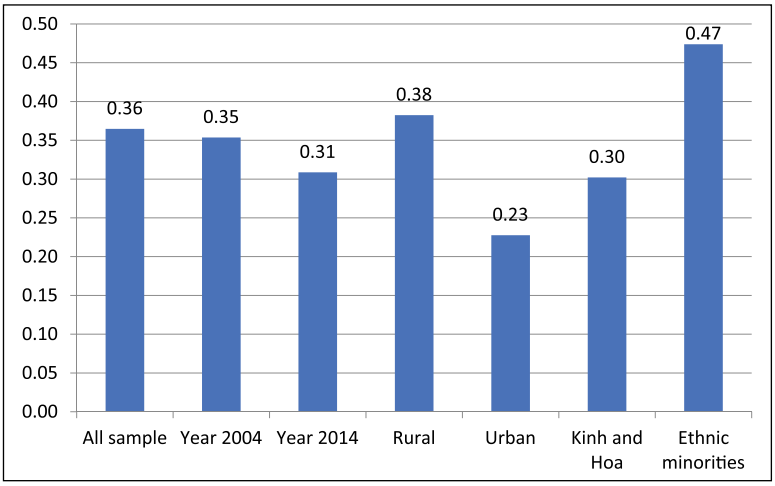

Figure 5. Intergenerational elasticity by rural/urban and ethnicity.
Source: Estimates from VHLSSs 2004, 2008, 2010 and 2014.

percent of households in the bottom quintile in 2010 were able to move to a higher income quintile in 2014. There was high mobility by occupational skills but less mobility by employment status and sectors.

Compared with Kinh people, ethnic minorities are more likely to move down but less likely to move up across income quintiles. Ethnic minorities also have a higher probability of downward employment mobility than Kinh people. Households with highly educated heads are more likely to move up and less likely to move down than households with heads with a lower level of education. Education also plays an important role in labour mobility from unskilled to skilled employment. Higher education reduces the probability of downward employment mobility. Household composition variables such as household size, the age structure of household members, gender and age of

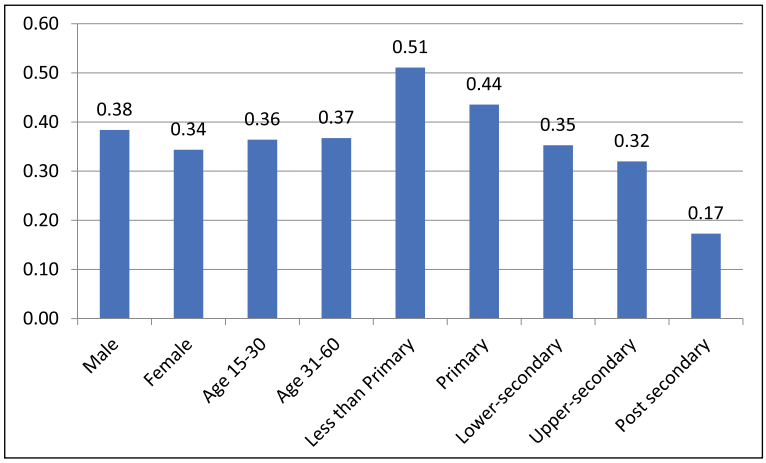

Figure 6. Intergenerational elasticity by gender, age and education.
Source: Estimates from VHLSSs 2004, 2008, 2010 and 2014.

household heads also matter in income and employment mobility, but at a substantially lower magnitude than ethnicity and education.

The intergenerational elasticity of earnings for parents and children is estimated at around 0.36. Intergenerational elasticity is very similar for 2004 and 2014. Intergenerational mobility is higher for urban and Kinh people than for rural and ethnic minority people. It indicates that less-advantaged people have lower intergenerational mobility. The analysis shows the important role of education in improving intergenerational mobility. The intergenerational elasticity for children with less than primary education and those with post-secondary education is 0.51 and 0.17, respectively. Education also plays an important role for improvement in intergenerational occupation mobility. With post-secondary education, 80% of people whose parents are unskilled have skilled or non-manual occupation.

Findings from this study suggest that the government should provide tertiary education and vocational training, especially for the poor and ethnic minorities. Currently, the poor and ethnic minorities in Vietnam receive a reduction in and an exemption for tuition fees. However, tuition fees account for a relatively small proportion of the total education expenditure. Thus, education subsidies and preferential loans can be provided for poor and disadvantaged students.

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We would like to thank Prof. TY Wang and three anonymous reviewers from the *Journal of Asian and African Studies* for their very useful comments on this study.

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Notes

1. There is an argument that the 'Great Gatsby' curve might not hold within every country because of different country contexts. For example, Bloome (2014) finds little correlation between inequality and mobility in the United States.
2. For poverty measurement in Vietnam, see, for example, Nguyen (2011) and Nguyen and Tran (2014).
3. There are 54 ethnic groups in Vietnam, in which the Kinh majority accounts for 85% of the population. Kinh people tend to live in delta areas, and have higher living standards than other ethnic minorities. Hoa (Chinese) people are a rich group and also live in delta areas. Thus, Hoa people are often grouped with Kinh people in studies on household welfare in Vietnam.
4. In 2014, one US dollar was equivalent to 22,000 VND.
5. Intergenerational elasticity is a measure of the sensitivity of a variable of children to a chance in the variable of parents. For example, in Hertz et al. (2008), the elasticity of education between parents and children at 0.58 means that a 1% increase in the number of years of schooling of parents is associated with a 0.58% increase in the number of years of schooling of children.
6. More specifically, the average absolute income change is computed as follows: $I = \frac{1}{n}\sum_{j=1}^{n}\left|Y_j^f - Y_j^i\right|$, and the relative absolute income change is computed as follows: $I = \sum_{j=1}^{n}\left|Y_j^f - Y_j^i\right| / \sum_{j=1}^{n} Y_j^i$, where $Y_j^{i,f}$ is the income level of individual or household j in the initial (i) or final (f) period, and n is the number of individuals or households in the data set.

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Appendix

Table A.1. Income mobility of households over 2004–2008.

Household groups	% moving up from the 20% bottom in 2004 to a higher quintile in 2008	% moving up from the 40% bottom in 2004 to a higher quintile in 2008	% moving down from the 40% top in 2004 to a lower quintile in 2008	% moving down from the 20% top in 2004 to a lower quintile in 2008	Absolute change in per capita income 2004-2008 (Fields and Ok index)	Relative change in per capita income 2004-2008
Gender of hh. head						
Male	52.2	14.4	15.3	41.0	3763.0	55.5
Female	42.6	14.0	13.9	46.3	3693.6	63.3
Age of hh. head						
Age 15-30	33.0	8.2	20.0	60.0	3310.4	63.4
Age 31-60	45.7	14.4	13.9	44.0	3735.2	60.9
Education of hh. head						
< Primary	37.5	9.1	20.1	57.6	2819.9	58.2
Primary	42.9	13.3	13.7	54.7	3357.7	63.7
Lower-secondary	52.5	14.6	15.5	52.5	4004.0	69.4
Upper-secondary	74.7	19.6	7.1	29.2	4140.1	52.5
Post-secondary	82.4	22.5	3.2	32.5	5342.0	55.8
Rural/urban						
Rural	43.8	13.2	16.2	53.6	3346.4	64.3
Urban	55.6	17.6	6.9	32.5	4966.0	54.7
Ethnicity of hh. head						
Kinh	56.8	14.4	13.3	44.3	3944.0	60.9
Ethnic minorities	17.3	10.2	25.7	63.5	1898.0	64.0
Total	44.7	14.1	14.3	44.6	3711.6	61.1

Source: Estimates from VHLSSs 2004 and 2008.

Table A.2. Regression of income mobility of households over 2004-2008.

Explanatory variables	Dependent variables					
	Moving up from the 20% bottom in 2010 to a higher quintile in 2014 (yes=1, no=0)	Moving up from the 40% bottom in 2010 to a higher quintile in 2014 (yes=1, no=0)	Moving down from the 40% top in 2010 to a lower quintile in 2014 (yes=1, no=0)	Moving down from the 20% top in 2010 to a lower quintile in 2014 (yes=1, no=0)	Absolute change in per capita income 2010-2014 (Fields and Ok index)	Relative change in per capita income 2010-2014
Gender of household head (male=1, female=0)	−0.0449 (0.0678)	−0.0378 (0.0311)	0.0211 (0.0276)	0.0727 (0.0647)	7.88 (378.68)	0.0139 (0.0570)
Age of household head	−0.0024 (0.0027)	−0.0005 (0.0013)	0.0022* (0.0013)	0.0009 (0.0034)	−18.98 (15.38)	−0.0025 (0.0023)
Ethnicity of head (Kinh, Hoa=0, ethnic minorities=1)	−0.3669*** (0.0672)	−0.0088 (0.0462)	0.1358*** (0.0515)	0.2378 (0.1593)	−960.57* (500.02)	−0.1546* (0.0843)
Hh. Head with educational degree	*Reference*					
Hh. Head with primary education	0.0370 (0.0665)	0.0454 (0.0317)	−0.0424 (0.0335)	−0.0093 (0.1019)	591.31 (419.33)	−0.0781 (0.0652)
Hh. Head with lower-secondary degree	0.1104 (0.0775)	0.0744** (0.0332)	−0.0532 (0.0344)	−0.0926 (0.1037)	1,340.62* (745.91)	−0.0447 (0.1008)
Hh. Head with upper-secondary degree	0.3073** (0.1425)	0.1382** (0.0538)	−0.1319*** (0.0408)	−0.3114*** (0.1140)	1,399.68* (766.52)	−0.1377 (0.0946)
Hh. Head with college, university	0.3583*** (0.1104)	0.1466*** (0.0467)	−0.1675*** (0.0353)	−0.2855*** (0.0993)	2,299.0*** (657.70)	−0.1156 (0.0940)
Household size	0.0300* (0.0155)	0.0101 (0.0088)	−0.0187** (0.0079)	−0.0515** (0.0236)	−198.00 (134.35)	0.0285 (0.0221)
Proportion of children below 15	−0.6010*** (0.1418)	−0.2120*** (0.0649)	0.1321** (0.0600)	0.3392* (0.1823)	−2,782.8*** (990.49)	−0.3227** (0.1384)
Proportion of members above 60	−0.2995* (0.1632)	−0.1001* (0.0556)	0.0610 (0.0672)	0.2406 (0.1464)	−2,044.7*** (679.32)	−0.3078*** (0.0977)
Log of annual crop land	0.0003 (0.0102)	0.0005 (0.0041)	−0.0060 (0.0038)	0.0107 (0.0089)	56.13 (115.07)	0.0054 (0.0133)
Log of perennial crop land	−0.0040 (0.0101)	0.0103** (0.0045)	−0.0047 (0.0037)	−0.0080 (0.0112)	113.50* (66.44)	0.0088 (0.0103)
Urban (urban=1, rural=0)	0.0333 (0.1191)	0.0280 (0.0403)	−0.0904*** (0.0333)	−0.0636 (0.0747)	1,454.04** (703.23)	−0.0423 (0.0863)
Red River Delta	*Reference*					
North East	−0.0598 (0.0964)	−0.0413 (0.0447)	−0.0648* (0.0389)	−0.0415 (0.0887)	−293.16 (545.66)	0.0018 (0.0820)
North West	−0.0526 (0.1085)	−0.1849*** (0.0417)	0.1826* (0.1007)	−0.4281*** (0.1070)	−1,075.02* (558.51)	−0.0587 (0.1209)
North Central Coast	−0.1233 (0.0813)	−0.0762** (0.0331)	0.0784 (0.0500)	0.0240 (0.1504)	−1,335.1*** (441.48)	−0.0382 (0.0755)
South Central Coast	0.0979 (0.0947)	−0.0300 (0.0388)	−0.1004*** (0.0364)	−0.0548 (0.1074)	−602.60 (534.14)	−0.0460 (0.0776)
Central Highlands	−0.0787 (0.1230)	0.0542 (0.0733)	−0.0099 (0.0578)	−0.1219 (0.1874)	53.86 (772.70)	0.0625 (0.1084)
South East	0.0352 (0.1148)	0.0792 (0.0499)	−0.0911** (0.0422)	−0.0461 (0.0844)	1,172.40 (842.05)	−0.0661 (0.1049)
Mekong River Delta	0.1021 (0.1042)	0.0186 (0.0387)	−0.0970*** (0.0326)	−0.1104 (0.0840)	2,126.85 (1,305.45)	0.1912 (0.1428)
Constant	0.7651*** (0.1917)	0.1381* (0.0838)	0.1926** (0.0801)	0.6591*** (0.2207)	4,689.8*** (1,083.05)	0.8377*** (0.1632)
Observations	397	1,092	1,092	328	1,817	1,816
R-squared	0.238	0.062	0.090	0.142	0.060	0.024

Robust standard errors in parentheses.
***$p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Estimates from VHLSSs 2004 and 2008.

Table A.3. Employment of individuals aged 15-60 in 2014.

Individual groups	Occupation			Employment		Sector		
	Unskilled manual	Skilled manual	Non-manual	Self-employed	Wage earner	Agriculture	Industry	Service
Gender								
Male	42.5	35.8	21.7	50.9	49.1	41.4	29.1	29.5
Female	47.4	21.6	31.0	63.3	36.7	45.0	20.2	34.8
Age								
Age 15-30	45.7	29.2	25.2	45.9	54.1	39.9	30.2	29.9
Age 31-60	44.6	28.7	26.8	61.9	38.1	44.6	22.3	33.0
Education								
Less primary	68.8	22.1	9.1	69.8	30.2	68.2	15.2	16.6
Primary	55.5	30.4	14.2	66.3	33.7	53.9	25.1	21.0
Lower-secondary	52.2	31.9	15.8	67.8	32.2	48.9	28.1	23.0
Upper-secondary	36.1	32.3	31.6	56.0	44.0	32.0	29.8	38.2
Post-secondary	9.7	25.7	64.6	22.2	77.8	10.7	23.8	65.6
Rural/urban								
Rural	54.9	29.0	16.1	64.0	36.0	55.3	23.3	21.4
Urban	22.1	28.4	49.6	41.0	59.0	15.6	28.0	56.4
Ethnicity								
Kinh	37.9	32.3	29.9	52.6	47.4	35.7	27.9	36.4
Ethnic minorities	81.6	11.0	7.4	79.8	20.2	82.1	8.2	9.6

Source: Estimates from VHLSS 2014.

Table A.4. Employment mobility of individuals over 2004-2008.

Individual groups	Moving up from unskilled to skilled and non-manual	Moving down from skilled and non-manual to unskilled	Moving from self-employed to wage jobs	Moving from wage jobs to employed	Moving from agricultural to non-agricultural	Moving from non-agricultural to agricultural
Gender						
Male	23.04	24.61	23.22	24.06	19.52	14.31
Female	11.99	26.43	13.60	24.59	15.46	14.43
Age						
Age 15-30	22.56	24.99	34.25	19.70	23.76	11.47
Age 31-60	15.38	25.43	12.77	26.33	15.33	15.49
Education						
Less primary	10.70	55.72	16.11	32.37	9.87	19.79
Primary	15.72	32.05	18.49	25.69	16.45	17.15
Lower-secondary	19.60	31.71	17.19	30.91	20.47	17.58
Upper-secondary	25.50	21.99	22.73	18.64	27.18	11.10
Post-secondary	27.78	12.10	13.99	12.12	30.21	7.22
Rural/urban						
Rural	16.82	29.00	17.88	27.25	17.27	19.96
Urban	20.16	18.61	16.66	15.08	19.80	4.13
Ethnicity						
Kinh	20.13	25.14	17.60	21.98	20.78	13.65
Ethnic minorities	3.28	28.92	18.18	44.90	5.41	34.77
Total	17.24	25.31	17.69	24.24	17.42	14.36

Source: Estimates from VHLSSs 2004 and 2008.

Table A.5. Regression of employment mobility of individuals over 2004-2008.

Explanatory variables	Dependent variables					
	Moving up from unskilled to skilled and non-manual (yes=1, no=0)	Moving down from skilled and non-manual to unskilled (yes=1, no=0)	Moving from self-employed to wage jobs (yes=1, no=0)	Moving from wage jobs to employed (yes=1, no=0)	Moving from agricultural to non-agricultural (yes=1, no=0)	Moving from non-agricultural to agricultural (yes=1, no=0)
	0.0890*** (0.0165)	−0.0351 (0.0328)	0.0878*** (0.0171)	−0.0391 (0.0255)	0.0319* (0.0184)	−0.0148 (0.0173)
Age	−0.0085* (0.0049)	−0.0242* (0.0128)	−0.0289*** (0.0057)	−0.0102 (0.0090)	−0.0112** (0.0051)	−0.0065 (0.0077)
Age squared	0.0001 (0.0001)	0.0004** (0.0002)	0.0003*** (0.0001)	0.0002* (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)
Ethnic minorities (yes=1, Kinh, Hoa=0)	−0.1264*** (0.0246)	−0.0194 (0.0907)	−0.0080 (0.0421)	0.1705*** (0.0550)	−0.1428*** (0.0263)	0.1540* (0.0793)
Having no educational degree	*Reference*					
Having primary education	0.0241 (0.0225)	−0.2184*** (0.0738)	−0.0201 (0.0263)	−0.0342 (0.0463)	0.0249 (0.0258)	−0.0067 (0.0384)
Having lower-secondary degree	0.0895*** (0.0255)	−0.2403*** (0.0811)	−0.0454 (0.0280)	−0.0126 (0.0494)	0.0465 (0.0285)	−0.0093 (0.0405)
Having upper-secondary degree	0.1303*** (0.0382)	−0.3370*** (0.0885)	−0.0167 (0.0421)	−0.1246** (0.0568)	0.1031** (0.0445)	−0.0679 (0.0416)
Having college, university	0.1844*** (0.0528)	−0.4214*** (0.0758)	−0.0400 (0.0436)	−0.2088*** (0.0475)	0.1945*** (0.0620)	−0.1021*** (0.0380)
Household size	0.0063 (0.0058)	−0.0040 (0.0138)	−0.0162** (0.0066)	0.0062 (0.0096)	0.0212*** (0.0073)	−0.0014 (0.0074)
Proportion of children below 15	0.0403 (0.0562)	0.0557 (0.0992)	0.0228 (0.0566)	−0.1420* (0.0771)	−0.0039 (0.0566)	−0.0110 (0.0611)
Proportion of members above 60	0.1006 (0.0873)	−0.1303 (0.1158)	−0.0034 (0.0906)	0.0343 (0.1124)	−0.0508 (0.1012)	0.0097 (0.0774)
Log of annual crop land	−0.0089** (0.0044)	0.0092 (0.0063)	−0.0006 (0.0034)	0.0036 (0.0048)	−0.0085** (0.0042)	0.0106** (0.0048)
Log of perennial crop land	0.0014 (0.0044)	0.0033 (0.0089)	−0.0042 (0.0036)	0.0266*** (0.0059)	−0.0101*** (0.0032)	0.0097 (0.0063)
Urban (urban=1, rural=0)	−0.0710 (0.0438)	−0.0207 (0.0515)	−0.0122 (0.0358)	−0.0195 (0.0411)	−0.0887 (0.0576)	−0.0886*** (0.0321)
Red River Delta	*Reference*					
North East	−0.0326 (0.0336)	0.1206* (0.0687)	−0.0699* (0.0381)	0.0898** (0.0443)	−0.1170*** (0.0370)	0.1441*** (0.0525)
North West	−0.0062 (0.0361)	−0.0686 (0.1289)	−0.0830 (0.0709)	0.0518 (0.0990)	−0.1553*** (0.0414)	−0.0668 (0.0904)
North Central Coast	−0.0519 (0.0324)	0.0834 (0.0722)	−0.0109 (0.0394)	0.1304** (0.0551)	−0.1820*** (0.0394)	0.1309*** (0.0485)
South Central Coast	0.0517 (0.0451)	−0.0087 (0.0509)	−0.0241 (0.0395)	−0.0141 (0.0461)	−0.1072** (0.0515)	0.0075 (0.0315)
Central Highlands	−0.0074 (0.0497)	0.0191 (0.1018)	0.0151 (0.0507)	0.0651 (0.0616)	−0.1467*** (0.0464)	0.1325** (0.0635)
South East	0.1083* (0.0598)	0.0132 (0.0591)	0.0202 (0.0428)	0.0328 (0.0485)	−0.0965 (0.0592)	−0.0085 (0.0275)
Mekong River Delta	0.0390 (0.0380)	−0.0374 (0.0598)	−0.0670** (0.0310)	−0.0120 (0.0442)	−0.1447*** (0.0388)	0.0664* (0.0376)
Constant	0.3240*** (0.1017)	0.9156*** (0.2483)	0.9777*** (0.1189)	0.3120* (0.1622)	0.5364*** (0.1076)	0.1678 (0.1363)
Observations	2,264	809	1,898	1,175	1,778	1,295
R-squared	0.100	0.109	0.106	0.129	0.104	0.120

Robust standard errors in parentheses.
***$p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Source: Estimates from VHLSSs 2004-2008.

Table A.6. Intergenerational mobility of employment in 2004.

Characteristics of children	% with skill upward: Skilled children and unskilled parents	% with skill downward: Unskilled children and skilled parents	% with wage-job upward: wage-job children and self-employed parents	% with wage-job downward: self-employed children and wage-job parents	% with sector upward: non-agricultural children and agricultural parents	% with sector downward: agricultural children and non-agricultural parents
Gender						
Male	18.88	43.16	37.18	24.94	32.96	20.41
Female	18.39	45.12	28.85	36.67	31.17	23.47
Age						
Age 15-30	18.34	44.60	33.59	30.36	31.78	22.39
Age 31-60	28.14	31.23	37.06	15.15	47.76	9.46
Education						
Less primary	6.17	68.21	24.96	17.14	18.71	28.12
Primary	13.27	57.67	29.61	29.05	29.21	22.17
Lower-secondary	13.59	63.28	26.11	48.86	28.44	35.06
Upper-secondary	22.35	42.56	39.58	37.88	37.45	19.94
Post-secondary	77.88	7.98	77.73	11.75	84.91	2.85
Rural/urban						
Rural	15.66	53.66	30.43	36.08	30.41	33.18
Urban	36.43	27.48	54.44	19.19	55.34	5.98
Ethnicity						
Kinh	21.96	41.97	39.22	28.39	38.69	19.80
Ethnic minorities	4.39	72.65	9.35	45.74	9.49	61.42
Total	18.67	43.98	33.73	29.94	32.22	21.71

Source: Estimates from VHLSS 2004.