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THE ROLE OF INTERNAL MIGRATION IN POVERTY REDUCTION OF VIETNAM

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ABSTRACT

By applying a simultaneous equation model to provincial-level data in Vietnam from 2010 to 2019, this study estimates the impact of internal migration on poverty reduction through changes in human capital and transformation in the labor structure. The results demonstrate that internal migration contributes to poverty reduction in the considered areas through increasing human capital and promoting labor mobility from the agricultural sector to its non-agricultural counterpart. This finding implies that it is necessary to create favorable conditions for learning and improving labor skills for migrants. The study also indicates further evidence of the relationship between the geography element and poverty. The Northern Uplands region in Vietnam is experiencing unfavorable conditions that lead to high poverty rates and limited internal migration. Therefore, increasing the mobility of the poor in the region may need further attention in addition to existing poverty reduction policies.

Contribution/Originality: This study is the first empirical studies to examnine several channels through which internal migration affects poverty reduction in Vietnam.

1. INTRODUCTION

Poverty is a problem that most developing countries encounter. Many studies on poverty have examined the role of migration in poverty reduction. A number of empirical studies have concluded that internal migration has a positive impact on poverty alleviation through remittances and the effect of returning migrants (Du, Park, & Wang, 2005; Zhao, 2002). Some studies have also shown that, when compared with international migration, internal migration has a stronger impact on poverty reduction (Adams Jr, 2004; Lokshin, Bontch-Osmolovski, & Glinskaya, 2010). Conversely, other studies have shown that the impact of internal migration on poverty reduction may not be as effective (Du et al., 2005; McCulloch et al., 2007).

In the context of Vietnam, many studies have investigated the impact of internal migration on poverty reduction, but the conclusions drawn are not uniform. De Brauw & Harigaya (2007) show that seasonal migration has had a positive contribution to poverty reduction in Vietnam from 1992–1998. Nguyen, Van den Berg, & Lensink (2011) show that long-term migration for non-employment causes significant changes in the poverty range, as well as in the severity of poverty for households with migrants. However, Cuong, Van Den Berg, & Lensink (2012) show that an increase in remittances does not reduce any of the three FGT indicators, while inequality may potentially increase.

This study casts doubt on the notion that remittances can play an important role in poverty alleviation in developing countries. Although there is evidence that internal migration has a positive role in poverty reduction, less clear-cut results have been found. On the other hand, existing studies on the impact of migration on poverty reduction are inclined to test the impact of migration through the manifestations associated with migration, such as deposits, seasonal migration, and migration return, or migration with specific goals, rather than considering how migration can affect poverty. This study provides further evidence on the role of internal migration in poverty reduction in Vietnam by estimating its impact through several channels whereby migration impacts poverty reduction.

2. LITERATURE REVIEW

The most valuable resource is labor by the poor; enhancing human capital for the poor is extremely important for poverty reduction (Le, 2019; Pham & Riedel, 2019; UNESCO, 2017). Human capital is the driving force of economic growth, affecting the general living standards and resources for poverty reduction (Nguyen, 2020). The role of human capital in poverty reduction is also reflected in the fact that human capital is an important factor that determines the success of development programs (Skeldon, 2006). In addition, labor migration from low-productivity sectors (usually the agricultural sector), where poverty rates are often much higher than in other sectors, to industrial and service sectors with higher productivity can reduce pressure on the agricultural sector and increase income in this sector, which, in turn, has a direct impact on poverty reduction. Workers who have moved to more productive areas also a have higher source of income. Changes in the composition of the labor force can have a significant impact on poverty reduction (McMillan & Rodrik, 2011; Pham & Riedel, 2019).

Over the past few decades, rural–urban migration has taken place on a considerable scale (Tianming, Ivolga, & Erokhin, 2018). Studies on migration imply that internal migration can affect human capital and labor restructuring, thereby affecting poverty reduction. In relation to human capital, migration affects human capital primarily through the effect of deposits. Remittances from migration expand income, enabling households to invest in education and health care for family members (Adams & Cuecuecha, 2013; Mueller & Shariff, 2011). According to Fan, Liu, Zhang, & Zhang (2018), inter-provincial emigration levels have increased greatly with the increase in economic development. In addition, migration allows migrants to have more options for human capital investment. One of the main reasons for encouraging migration is to improve living conditions and learning opportunities. This is an important factor that involves migration from rural to urban areas, especially to large cities where the education system is more developed. Gibson, Datt, Murgai, & Ravallion (2017) and Emran & Shilpi (2018) suggest that city development may be more conducive to poverty reduction. On the other hand, in order to compete with native workers, migrant workers must try to create an advantage by improving their education and skills. Highly educated, skilled migrants returning to their homeland is a contributing factor to the improvement of human capital in the place of departure (Démurger & Xu, 2011; Zhao, 2002). The impact of migration on human capital is also due to the selective nature of migration. Not all workers are able to migrate because they do not meet the requirements of the destination's labor market. Alternatively, high human capital increases the expected income from migration. This causes migration to put more pressure on those who stay to invest in human capital to be able to migrate and gain higher benefits from migration in the future (Lucas, 2016; Suzuki & Suzuki, 2016). However, the impact of migration through human capital on poverty reduction can be negative. The departure of people with high technical expertise causes the affected areas to lose human capital, output and income, and reduces the effectiveness of development programs (including poverty reduction programs). However, the final impact of high-skilled migration on welfare remains unclear, as these workers can earn higher incomes and send more money home. Alternatively, the migration of workers with different qualifications has different effects on the investment in human capital for those who stay. Accordingly, the migration of highly educated people is considered to have a more positive influence on the decision to invest in the education of the people who stay compared to the migration of low-skilled people. Regarding the impact of labor restructuring, macro-level migration theories imply that migrant workers are always in demand in economies and labor markets in

developed regions. This is especially significant because, in transition economies, the majority of the poor are active in rural agriculture, and the agricultural sector is dominated by small households (Ma, 2011). Although agricultural activities are of low productivity and seasonal, finding non-agricultural jobs in the locality involves difficulties since agricultural workers are mainly untrained. Migration allows agricultural workers to have more opportunities to work in non-agricultural sectors with higher productivity, thereby improving income and reducing poverty (Christiaensen, Weerdt, & Todo, 2013; Lewis, 1954; McCulloch et al., 2007). Regardless, migrant workers contribute significantly to the development of the non-agricultural sector, especially in developing countries that often start with labor-intensive industries. The growth of the economic sector promotes overall economic growth, which, in turn, increases resources to reduce poverty.

3. METHODOLOGY

3.1. Estimation Models

Although migration can affect poverty, the selective nature of migration makes it possible for poverty to have a negative impact on migration: poverty is both a driver of migration and a constraint on migration of the poor. Similarly, low human capital and a high share of labor employed in agriculture lead to low productivity and income, and, in turn, low poverty. However, poverty makes it difficult to invest in human capital, as untrained workers become trapped in the agricultural sector and have difficulty moving into other areas. In this case, using a pure one-equation model and ignoring the simultaneity between the variables would have endogeneity – the explanatory variables are correlated with the random error in the model. This leads to bias and inconsistent OLS estimations for each equation (Gujarati & Porter, 2009). To solve this simultaneous relationship, the study uses the following simultaneous equation model:

$$POV_{it} = \beta_{10} + \beta_{11} MIGR_{it} + \beta_{12} AL\_NAL_{it} + \beta_{13} HUMCAP_{it} + X1_{it}\beta_{14} + u_1 \quad (1)$$

$$AL\_NAL_{it} = \beta_{20} + \beta_{21} MIGR_{it} + \beta_{22} POV_{it} + \beta_{23} HUMCAP_{it} + X2_{it}\beta_{24} + u_2 \quad (2)$$

$$HUMCAP_{it} = \beta_{30} + \beta_{31} MIGR_{it} + \beta_{32} POV_{it} + \beta_{33} AL\_NAL_{it} + X3_{it}\beta_{34} + u_3 \quad (3)$$

$$MIGR_{it} = \beta_{40} + \beta_{41} POV_{it} + \beta_{42} AL\_NAL_{it} + X4_{it}\beta_{43} + u_4 \quad (4)$$

POV_{it} is the poverty rate of province i in year t, measured by the proportion of households with an average income below the poverty line in the total number of households in province i in year t.

$MIGR_{it}$ is the emigration rate of province i in year t, measured by the average number of migrants leaving province i per 1,000 people from that province.

$$MIGR\ (‰) = \frac{number\ of\ emigrants}{Average\ population}\ x\ 1000$$

AL_NAL_{it} is the percentage between the number of employees working in the agricultural sector and the employees working in the non-agricultural sector (including industry and services) of province i in year t.

$HUMCAP_{it}$ is the percentage of trained workers of province i in year t.

$X1_{it}, X2_{it}, X3_{it}, X4_{it}$ are control variable vectors, which are determined mainly based on factors affecting migration from theory. They consist of:

UR_{it}, which is the percentage of unemployed and non-working workers in the labor force of province i in year t, and FD_{it}, which is the percentage of credit outstanding for the private sector to the GDP of province i in year t and represents financial depth – an indicator of the province's financial market development.

Since this index is not available for all provinces for the period between 2010 and 2019, this index was estimated based on the recommendation by Le & Chu (2020). Accordingly, FD is estimated according to the following formula:

$$FD = \frac{GDP\ of\ province's\ banking\ and\ finance\ sector}{GDP\ of\ country's\ banking\ and\ finance\ sector}\ x\ \frac{Credit\ balance\ of\ the\ country}{GDP\ of\ province}$$

$LGDPPC_{it}$ is the natural logarithm of the GDP per capita of province i in year t (at 2010 constant prices). $URBRATE_{it}$ is the urbanization rate of province i in year t, measured as a percentage of the urban population in the

province's total population.

PCI_{it} is the provincial competitiveness index of province i in year t, reflecting the favorable business environment of the private sector. This is a representative indicator of institutional quality.

FDI_{it} is the cumulative percentage of registered foreign direct investment in GDP of province i in year t.

REGION is a dummy variable representing the region. Vietnam consists of six socio-economic regions, namely the Northern Midlands and Mountains; Red River Delta; North Central Coast and Central Coast; Highlands; and the Southeast and Mekong River Delta. The Northern Midlands and Mountainous region is home to many ethnic minority communities and has the highest poverty rate in the country during recent years. Coxhead, Nguyen, & Vu (2015) show that the migration rate in ethnic minority communities is much lower than in other regions, and this may be the leading cause of persistent poverty in these communities. The REGION variable takes the value of 1 if the province is in the Northern Midlands and Mountains. In other provinces, the REGION variable takes the value of 0. The above simultaneous equation system model (structural model) is transformed into a reduced form, and the coefficients of each equation are estimated through the ordinary least squares (OLS) method. From these estimation coefficients, the coefficients of the structural model are estimated back through the 3-stage least squares (3SLS) method implemented by Stata software.

3.2. Data

This study uses data from 63 provinces/cities directly under the central government, collected and calculated mainly from the General Statistics Office (GSO). Migration rates are taken from the Population Change and Family Planning Survey on April 1, 2010–2019. In the Annual Population Change Census, a migrant is a person whose actual place of permanent residence at the time of the census is different from his actual place of permanent residence one year prior. The data on employment across industries is taken from the annual Labor Force Survey data conducted by the GSO. In addition to data from GSO, the study also uses data from the Foreign Investment Department, Ministry of Planning and Investment, the State Bank of Vietnam, and the Vietnam Chamber of Commerce and Industry. The descriptive statistics of the variables in the estimated model are presented in Table 1.

Table 1. Descriptive statistics of variables in the estimated model.

Variable	Number of observations	Average value	Standard deviation	Smallest value	Largest value
Poverty rate (POV)	441	13.12	9.94	0	50.8
Emigration rate (MIGR)	441	7.73	3.91	1.3	29.7
Human capital (HUMCAP)	441	15.5	6.68	5.1	42.7
Structure of agricultural and non-agricultural labor (AL_NAL)	441	155.2	119.3	2	592
Financial development (FD)	441	0.47	3.83	0.007	47.01
Unemployment rate (UR)	441	1.87	1.16	0.02	6.5
Per capita income (LGDPPC)	441	27.42	15.1	8.82	95.1
Urbanization rate (URBRATE)	441	26.82	16.6	9.65	87.4
Dummy variables for the Northern Midlands and Mountains (REGION)	441	0.22	0.41	0	1
Ratio of FDI to GDP (FDI)	441	108.7	265.7	0	3870.7
Provincial Competitiveness Index (PCI)	441	58.18	3.89	45.11	73.53

4. RESULTS AND DISCUSSION

Table 2 presents the results of the simultaneous equation model for estimating the impact of internal migration on poverty reduction through the channel of labor restructuring and human capital.

Table 2. Estimation results of the simultaneous system of equations model.

Variable	Equation (1)	Equation (2)	Equation (3)	Equation (4)
Poverty rate (POV)		8.62***	-0.66***	0.15***
		(2.47)	(0.09)	(0.03)
Structure of agricultural and non-agricultural labor (AL_NAL)	0.22**		-0.05***	-0.24***
	(0.09)		(0.007)	(0.03)
Human capital (HUMCAP)	-1.31***	-6.53*		
	(0.30)	(3.81)		
Emigration rate (MIGR)	-0.08	-56.64***	0.76*	
	(0.05)	(12.59)	(0.04)	
The development of financial markets (FD)	-0.90*	5.30		0.11**
	(0.48)	(3.30)		(0.05)
Unemployment rate (UR)	1.91	8.1	-0.90*	0.01
	(2.59)	(17.83)	(0.53)	(0.28)
Urbanization rate (URBRATE)	0.74*			-0.04**
	(0.39)			(0.01)
Dummy variables for the Northern Midlands and Mountains (REGION)	54.01***	0.09	-4.15***	-6.18***
	(18.33)	(0.05)	(0.48)	(0.79)
Logarithm of per capita income (LGDPPC)			1.85***	
			(0.71)	
Provincial Competitiveness Index (PCI)		3.99	-0.08	0.04
		(2.58)	(0.11)	(0.03)
Ratio of FDI to GDP (FDI)		-0.27***		0.01
		(0.04)		(0.007)
Constant	-80.76**	380.40***	52.79***	8.92***
	(40.11)	(138.9)	(8.89)	(2.63)
Observation number	441	441	441	441
R-squared	-7.82	-2.63	-0.42	-0.10
Endogenous variables: POV, AL_NAL, HUMCAP, MIGR Exogenous variables: FD, UR, URBRATE, FDI, REGION, LGDPPC, PCI				

Notes: Standard deviation values are in brackets; *** p < 0.01, ** p < 0.05, * p < 0.1.

The estimated coefficient result of the migration rate variable in Equation 1 has a negative sign but is not statistically significant, implying that the prevalence of migration has no direct impact on poverty reduction in the province. The reason is that, although a province has a high emigration rate, the actual number of poor people who migrate is not large, which makes the direct poverty reduction impact of migration unclear. According to the author's estimation from the Vietnam Household Living Standards Survey (VHLSS) 2016, only 17 out of 371 (4.58%) poor households had migrants in 2016. The estimated results on the impact of human capital and labor restructuring are in line with the initial expectations. The increase in the proportion of trained workers in a province has a strong impact on poverty reduction. If the rate of trained workers of a province increases by one percentage point, the province's poverty rate will decrease by 1.3 percentage points. Meanwhile, if the ratio of agricultural workers to non-agricultural workers increases by one percentage point, the province's poverty rate rises by 0.23 percentage points. Thus, human capital and labor restructuring have an impact on poverty reduction in both ways, by increasing the productivity of agricultural laborers and increasing the income of workers who transferred to non-agricultural sectors. The productivity statistics by the VNPI (2016) support this argument. Labor productivity calculated at fixed prices in 2010 in the agricultural sector increased from 16.8 million VND/worker in 2010 to 32.9 million VND in 2016. Labor productivity in the industrial and service sectors also increased from 80.3 million VND/worker and 63.9 million VND/worker in 2010 to 103.5 million VND/worker and 84.5 million VND/worker in 2016, respectively.

Migration and urbanization are two closely related issues. The model adds a variable to reflect the degree of urbanization of the province in order to compare the relative impact of intra-provincial population mobility versus out-of-province migration on poverty reduction. The estimated coefficient of the urbanization variable has a positive sign and is statistically significant. This implies that urbanization has a negative impact on poverty reduction. This phenomenon may be due to the limitations of the urbanization process in Vietnam. Urbanization is taking place unevenly, mainly by the formation of small cities and lack of cohesion. The rapid urbanization of land and lack of

planning lead to unreasonable use of land funds and a rapid reduction in agricultural land areas, affecting the jobs and income of millions of agricultural workers. In addition, besides the impact of industrialization modernization, the proportion of the urban population in the provinces has fluctuated strongly recently due to the decisions to adjust the administrative boundaries. This process did not have a positive impact on people's welfare (Hoang & Doan, 2015).

The estimated results of the dummy variable representing the region have a positive sign and are statistically significant. This implies that the geographical location has an influence on the poverty status of the province. More specifically, if the province is located in the Northern Midlands and Mountains, its poverty rate tends to be higher than in other regions. The model adds a control variable for the degree of financial market development and the province's unemployment rate. The coefficient of the financial market development variable has a negative sign and is statistically significant, showing that the development of the financial market has a positive effect on poverty reduction. It can be seen that the increase in credit outstanding to the private sector relative to GDP reflects the private sector's access to broader sources of official credit. The private sector is currently creating up to 62% of jobs in all businesses (Vu, 2016). The development of this sector contributes to improving the income and welfare for the majority of people in local society. Meanwhile, the coefficient of the unemployment rate variable is not statistically significant. The estimated results of Equation 2 with the dependent variable represents the proportion of agricultural workers to non-agricultural workers (representing labor restructuring) of the province and shows that the coefficient of migration has a negative sign and is statistically significant. If the emigration rate increases by one point per thousand, the ratio of agricultural to non-agricultural workers decreases by 56.65 percentage points. This implies that migration is one of the factors promoting labor mobility in the province. Since agricultural workers are mainly untrained, it will be difficult to move from the agricultural sector to the non-agricultural sectors within the province. This means that the number of non-agricultural jobs in the province may not be large enough, and agricultural workers may not meet the requirements of the non-agricultural sectors. Meanwhile, migration opens up a larger space with more non-agricultural job opportunities and more diverse labor skills requirements. This creates an opportunity for some of the workers to withdraw from the agricultural sector.

Foreign direct investment (FDI) into the province also has an effect of reducing the proportion of agricultural workers. In recent years, FDI has mainly focused on the processing and manufacturing industries, creating more non-agricultural job opportunities and contributing to accelerating labor restructuring.

Poverty rates have a positive relationship with the ratio of agricultural workers compared to non-agricultural workers. The characteristics of poor households are that these households mainly operate in the agricultural sector and have low human capital; the opportunities for the poor to work in non-agricultural sectors will be very low. This keeps poor workers trapped in the agricultural sector, reducing the degree of labor migration from the agricultural sector to the non-agricultural sectors of the province. Factors representing the favorable business environment of the private enterprise sector (through the PCI index) or the development of financial markets and the unemployment rate have no effect on the transition of labor restructuring in this model.

The estimated result of Equation 3 with the dependent variable in terms of human capital shows that the coefficient of the migration variable has a positive value and is statistically significant. The is due to a large number of domestic migrants moving for the purpose of studying and improving their professional and technical qualifications. Moreover, migrants, after finishing their studies, can return to contribute to improving the quality of human capital in their homeland. Alternatively, a number of studies show that migration creates pressure for those who stay to improve human capital to serve later migration. This is consistent with the fact that, in Vietnam, the statistics of the annual population change survey show that migration for the purpose of schooling is the third most common reason (approximately 10%) after migration for work and family. The UNFPA (2016) also reported similar results when 23.4% of migrants in their survey moved for educational reasons (the third main reason after work, economic reasons (34, 7%), and family-related reasons (25.5%)). The type of migrants coming to study accounted for 23.8%, those who finished school accounted for 1.6% migrating back, those stopping after finishing school accounted

for 27.6%, and those returning to study accounted for 3.1%. According to the coefficients of the poverty rate variable, the ratios of agricultural workers to non-agricultural workers of the province have a negative sign and are statistically significant. Poverty reduces the ability of household members to invest in education. In addition, agricultural activities in Vietnam still mainly follow farming practices and have not yet applied new technologies. Therefore, there is no pressure to improve the quality of labor. When the proportion of laborers working in the agricultural sector is high, the proportion of trained workers in the province tends to decrease. The high unemployment rate also has a negative impact on the province's human capital. This is understandable because the high unemployment rate reduces the ability to get a job, even for trained workers, making investment in human capital less attractive. In this model, the dummy variable representing the socio-economic region has a negative sign and is statistically significant. Provinces located in the northern mountainous region tend to have a lower proportion of trained workers than other regions. The provinces located in the northern mountainous region have a high proportion of ethnic people and many ethnic minority communities, hence agricultural activities account for a large proportion. Equation 4 with the dependent variable is the migration rate, adding control variables based on existing migration theories, especially the variable reflecting the development of the financial and labor markets. This finding is supported by the recent study by Churchill & Marisetty (2020). The estimated result of the coefficient poverty rate variable has a positive sign and is statistically significant. This result reflects the fact that poverty is also a motivating factor for migration. However, this result does not indicate whether the poor or the non-poor make up the majority of migrants. When the general living standard of the locality is low, people in the high-income group may have the desire to migrate to areas with higher living standards to meet their needs for better living and working conditions. The estimated result of Equation 4 shows that migaration reduces in provinces which have a high ratio of agricultural workers to non-agricultural workers. This result initially seems implausible because disguised unemployment and seasonality in agricultural activities increase the desire of workers in this area to migrate. However, the selectivity of migration implies that agricultural workers may face difficulties migrating because of low human capital, and they may not be able to meet the costs of migration. This can be seen in the northern mountainous provinces of the country, such as Ha Giang, Tuyen Quang, and Lao Cai. These provinces have a high ratio of agricultural workers to non-agricultural workers, and human capital is reflected in the low percentage of trained workers and low emigration rate. The second reason is that agriculture is the main activity in these provinces. The agricultural industry in these localities is still well developed due to favorable natural conditions. Resources for agricultural production, such as agricultural land area, are still high, and the agricultural production methods are difficult to apply machinery to and still require a lot of manual labor. Additionally, local economic development policies are still aimed at encouraging agricultural development. Therefore, workers in these provinces do not have the motivation to migrate to find other jobs. This phenomenon can be seen in the provinces of the Central Highlands, such as Kon Tum, Gia Lai, Dak Lak, and Dak Nong. Another technical reason is that although agricultural workers have migrated, their migration activities in a short period of time have not been fully documented. Migration data in this model is compiled from the annual population change survey; only those whose current permanent residence differs from the previous year of permanent residence are counted as migrants. The coefficient of the urbanization variable has a negative sign and is statistically significant. This implies that if the province has a high urbanization rate, out-migration will decrease. Urbanization and development go hand in hand (World Bank, 2016). This because when the urbanization rate is high, people in a province can find non-agricultural jobs within that province instead of migrating to other provinces. On the other hand, if urbanization is caused by industrialization and modernization, which lead to the synchronous development of markets, people's living standards improve, and the disparity compared to other provinces is reduced. Moreover, migration may also decrease. The dummy variable reflecting the socioeconomic region continues to show that migration in the northern mountainous provinces tends to be lower than in other regions. This is because these areas are mainly inhabited by ethnic minority communities which have difficulties in communicating in the Kinh language, have low education levels, and are unable to afford the cost of immigration.

5. CONCLUSION

Based on the results obtained, this study provides prominent policy implications to enhance poverty reduction from internal migration. First, internal migration has a positive effect on human capital, and it is necessary to create favorable conditions for learning and improving labor skills for migrants. Convincing skilled and technical migrants to return to their homeland may be a worthwhile approach to enhance human capital and contribute to poverty reduction. Second, it is necessary to implement policies that support the creation of job opportunities and ensure benefits for migrant workers. Support for people who are searching for jobs will reduce the time and costs related to the search, while ensuring benefits for migrant workers. This factor will contribute to accelerating the restructuring of labor from the agricultural sector to the non-agricultural sector, and thereby promote poverty reduction. Third, the problem of poverty in Vietnam is associated with geographical and ethnic factors, while the migration of ethnic minorities and people in remote areas has recently been limited. Increasing the mobility of the poor in these regions may need further attention in addition to existing poverty reduction policies.

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