

2023

BSP DISCUSSION PAPER

Series
No. 016



The Impact of Migration in the Philippines: What About Those Left Behind?

Neil Fidelle G. Lomibao

BSP RESEARCH ACADEMY

ABSTRACT

Neil Fidelle G. Lomibao¹

This version: 8 May 2023

More than half of the Philippine population has experienced moving either within the country or abroad. While most have seen the benefits of migration, particularly the increase of household income through remittances, not much emphasis has been given on those they left behind. Using a Difference-in-Differences (DiD) approach in the 2018 National Migration Survey (NMS), this paper finds that migration has a negative impact on the percentage of school-aged household members studying from 2013-2018. Interestingly, further investigation shows that the negative impact of migration is more pronounced in households with a female migrant than those with a male migrant.

JEL Classification Numbers : E24, D13, J6, I20 F22, F24, I25

Keywords : migration, remittances, non-migrants

Author's Email Address : LomibaoNG@bsp.gov.ph

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¹ Neil Fidelle G. Lomibao is a Bank Officer II at the BSP Research Academy. The author is grateful for the guidance of the BSP Research Academy, particularly Dr. Veronica Bayangos, Dr. Faith Christian Cacnio, and Dr. Hazel Parcon-Santos, and to the BSP Research Experts Panel members Dr. John Nye, Dr. Roberto Mariano, and Dr. Ramon Moreno. The author also acknowledges the assistance of the Philippine Statistics Authority in providing the data set for this research paper; and the comments of professors from the UP Population Institute during the initial presentation of the results of this study.

1. Introduction

Through the years, hundreds of thousands of Filipinos have migrated or transferred to richer regions of the Philippines such as the National Capital Region, Cavite-Laguna-Batangas-Rizal-Quezon Region (CALABARZON), and Central Luzon. The Philippine Statistics Authority (PSA) and University of the Philippines Population Institute (UPPI) (2019) indicated that 59 percent of the entire population are considered migrants, having experienced moving within or outside the country during their lifetime. This movement has been steadily increasing since the end of World War II and constantly changing its flow.

Filipinos see migration as a way to improve their economic situation. About 45 and 89 percent of internal and international migration, respectively, are driven by employment. This is evident from the steady growth of overseas Filipino workers (OFWs) as regularly reported by the Philippine Statistics Authority. However, migration entails some initial costs and sacrifices, such as financing the move or leaving a family member behind. With this, migrants usually send a portion of their income back as a remittance. This form of cash transfer became a major source of income for different households to finance their needs and improve their quality of life. In 2022, the Bangko Sentral ng Pilipinas (BSP) posted a record high US\$ 36.14 cash remittance from overseas Filipinos.

The effects of migration on household members were studied by various researchers, such as Acosta, et al. (2007), Cabegin (2006), Rodriguez and Tiongson (2001), Pernia (2008), and Tullao et al. (2007). Different studies have already established the positive impact of international migration through the form of remittances and boosting the local economy of the receiving country by having more skilled workers. There are also arguments that international migration lessens the participation in the labor force of those left behind. However, given that Filipinos move internally and internationally, there are a few studies, if none, about the impact of both internal and international migration on those left behind.

According to the 2018 National Migration Survey, 60 and 85 percent of the population did not move in their lifetime and between 2013-2018, respectively. The large number of Filipinos left behind considered as non-migrants warrants specific attention as they are the ones that might be affected by the impact of migration. This could also add to the current body of literature since it can greatly contribute to the economic and financial development trajectory of the country.

Thus, this paper analyzes the impact of migration using the microdata from the 2018 National Migration Survey. It involves using a Difference-in-Differences (DiD) approach to understand the impact of migration. The study is guided by the research question: What is the impact of both internal and international migration on household members left behind?

This research paper is organized as follows: Section 2 examines the relevant literature. Section 3 analyzes the data set of the 2018 National Migration Survey. Section 4 measures the impact of migration. Section 5 discusses the results. Finally Section 6 provides the conclusion.

2. Review of Related Literature

Migration, a form of geographic or spatial mobility of people involving a change of usual residence during a specified period, is often seen by Filipinos as a way to improve their economic situation. About 46 percent of internal and 89 percent of international migration of Filipinos are mainly driven by employment (National Migration Survey, 2018). According to the PSA and UPPI, the flow of migrants may indicate the economic condition of a certain region where migrants can improve their lives. Regions in the country with a high number of in-migrants may signify that it has a vibrant economy and better working opportunities. The National Capital Region (NCR) and Cavite-Laguna-Batangas-Quezon Region (CALABARZON) are the top two migrant-gaining or receiving regions and, at the same time, the two largest contributors to the country's gross domestic product (GDP). This is also the case for foreign destinations of overseas Filipino workers. On one hand, Saudi Arabia, United Arab Emirates, Malaysia, Japan, Singapore, Taiwan, Kuwait, Hong Kong, and the United States of America (USA) are the top destination countries – mostly advanced or middle-income economies – for overseas Filipino workers.

On the other hand, regions with more numbers of out-migrants may indicate the opposite economic outlook compared with those mentioned above. Bicol and Eastern Visayas are the top two losing or sending regions. At the same time, the Bangsamoro Autonomous Region of Muslim Mindanao (BARMM) is the region with the highest percentage of people planning to migrate in the next five years and has the largest share of household members who are OFW (PSA and UPPI, 2018). These regions have the lowest per capita GDP in the country (PSA, 2021).

Typically, migrants in the Philippines are internal. The 2018 National Migration Survey (NMS) noted that more than 52 percent of Filipinos moved to or lived in another area within the country for three months or more. Moreover, only about three (3) to seven (7) percent were able to move abroad. The remaining 45 percent were accounted as non-migrants.

Since the end of World War II, several studies noted that the internal migration of Filipinos has been increasing and changing its flow. Pascual (1966) and Flieger (1977) noted a difference in the net migration rates of regions from 1948-1960 and 1960-1970, respectively. Filipinos started to move across regions in the 1960s due to the advances in industrialization in the country. In the 1950s, heavily populated areas might have reached a saturation point, turning people to look for more opportunities in other unexplored areas. This is the case of the strong in-migrant flows in Bulacan, Cavite, Laguna, and Metro Manila. By 1970, 14 percent of Filipinos were identified to be residing in a region other than their place of birth (Abad, 1981).

A unique turning point to note was when the Middle East (ME) labor market opened to large-scale employment of overseas workers to support its infrastructure program. Tan (1994) noted that in 1975, 1,552 Filipinos were sent as the first batch of workers to the ME. By 1980, the number of ME-bound OFWs reached 132,044. Growth turned negative from 1987-1990 due to the drying up of construction work in the ME but this was complemented by increasing East Asian labor market demand for domestic workers. The varied skill composition of OFWs, from doing elementary work to professional roles, enables the country to adjust to demand changes unlike other labor-exporting countries, such as India and Pakistan.

However, Tan (1994) also noted this was not the case in Thailand and South Korea during this period. The drop in their labor export was due to the more rapid economic development, making foreign jobs less attractive. In the case of the Philippines, the country still consistently sends large numbers of migrants abroad. Recent data from the Philippine Overseas Employment Agency (POEA) show that from

2010-2016, the agency processed a yearly average of more than 500,000 newly hired OFWs for deployment to different countries abroad.

The consistent large volumes of international migrants that complemented the already existing mobility of Filipinos in the country provided stronger support to the Philippine economy using their hard-earned cash remittances. With the increasing number of migrants going out of the country, a review of the literature shows that starting in the 1980s, studies on migration are more focused on international migration. Nonetheless, there are studies on internal migration in the Philippines, that of Flieger (1977) and Abad (1981), and research papers, particularly by Pernia (1974, 1975a, and 1975b).

Filipino international migrants, often referred to as “modern-day heroes” of the country, became the backbone of the Philippines’ economic recovery during the pandemic (Venzon, 2022). In 2021, personal remittances from overseas Filipinos amounted to a record high of US\$ 36.14 billion (BSP, 2023). Most of these remittance transactions came from Asia where 83.6 percent of OFWs work (PSA, 2022; BSP, 2022).

While there is no exact reported total value of domestic remittances, the National Migration Survey suggests that remittance transactions might equally come from a domestic or foreign source, with 96 percent of those who receive any kind of remittance are get it from either of the two sources. The median value of cash remittances from overseas amounts to PhP 26,000 while that of domestic remittances is PhP 5,000 (PSA and UPPI, 2019).

Even if the amount of cash remittances is significantly large, the NMS also shows that only 10 percent of the entire population have sent remittances to other family members, and 16 percent of the population aged 15 years and older have received remittances. At the same time, 70-75 percent of the respondents in the survey indicated they allocate the remittance they receive on food; 30-40 percent and 20-30 percent of them on education and health, respectively; and only between 4-5 percent on savings or investments.

The PSA and UPPI (2019) and Tan (1994) noted that the value of remittances is directly proportional to the educational attainment of the migrant. However, most Filipino migrants only has basic education. About 72 percent of internal migrants in the country have neither attended high school nor college. Furthermore, 44 percent of international migrants have completed high school and only 28 percent have at least some college education.

The high number of less educated Filipino migrating internally may be the reason why 58 percent of all internal migrants are living or working in rural areas (PSA and UPPI, 2019). At the same time, the huge chunk of international migrants who are only high school graduates can be attributed to 46.7 percent of all OFWs doing elementary work mostly located in Asia (PSA, 2022). Meanwhile, on the other side of the globe, it was noted that 40 percent of Filipino migrants in the United States of America are currently employed in management, business, science, and arts occupations (U.S. Census Bureau, 2018). The current educational background of Filipino migrants might be one of the main contributors to their current location and nature of their work.

While everyone has been talking about migration, what about those who did not migrate? Meantime, the National Migration Survey noted that almost half of the population are non-migrants who have not yet experienced moving for at least three months or more in another area. They are relatively older and in a marital union, 43 percent did not finish high school, and seven out of 10 live outside NCR or CALABARZON. They are also distributed across the five income quintile categories of the PSA – the first quintile being the lowest income and the fifth being the highest income group.

Several studies show the impact of migration on those left behind, but most of these cover only international migration. Jolipa (1980) noted that several scholars show the disadvantages of being non-migrants. Often, non-migrants have lower cash income than migrants who either went to urban areas or abroad. However, while migrants have higher earnings to send back for their family's expenditures, Tarroja and Fernando (2013) also noted that children of OFWs, especially of migrant mothers, tend to score lower and have poorer performance in school. Several studies on this observation were conducted by the Institute of Population and Social Research (2012), Monserud and Elder (2011), Nanthamongkolchai et al. (2006) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018) called this set up of migrants leaving their children to their partner or grandparents as "skip generation households". This type of household has a negative impact on child development, which in turn contributes to persistent poverty. This is important to note especially since Filipino women are more migratory than men. More than half, or 59.6 percent, of OFWs are female. This finding may affect 1.3 million families (PSA and UPPI, 2019; PSA, 2022).

Pernia (2008) noted that international remittances appear to raise the average income of all income groups but more so for the richer Filipino households than for the poorer ones. This is consistent with the study of Acosta et al. (2007) on several Latin American countries, such as Bolivia, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Paraguay, Peru, and the Dominican Republic. Poorer households tend to benefit more from domestic remittances, according to Ang et al. (2009). They noted that internal remittances generate more welfare than international remittances. The caveat, however, is that they observed that not all internal migrants attain better jobs after migrating and can afford to send remittances back to their families. Internal migrants to urban areas also remit more than those who migrate to rural areas.

Migration may also negatively influence the participation of those they left behind in the labor force. Cabegin (2006) noted that for married couples, the participation of one partner in overseas migration significantly reduces the labor participation and supply behavior of the other partner. Furthermore, studies by Acosta, et al. (2007), Rodriguez and Tiongson (2001), Tullao et al. (2007), and Pernia (2008) observed that international remittances may also result in complacency as household members left behind tend to reduce participation in the workforce.

Across Southeast Asia, UNESCO (2018) highlighted that the age of migrants also affects both the source location and the destination. On average, migrants start to move at a relatively young age from rural to urban areas. This results in the decline of the youth labor force in rural areas and can lead to an aging rural population, an increased burden of care, and a decline in agricultural production if there is no replacement or compensation for the labor force. Additionally, the World Bank (2017) noted that the high volume of migrants coming to urban areas in the Philippines strained housing, infrastructure, and basic services, resulting in the proliferation of informal settlements, which increased from 4.1 percent in 2003 to 5.4 percent in 2012.

While these studies mostly highlight the plight of overseas workers and their families, existing literature suggests that there have been only a few attempts to analyze the impact of migration (both internal and international) on non-migrants. It is important to fill the gap of existing literature on the impact of both internal and international migration in the Philippines. While the country continually sends hundreds of thousands of OFWs annually, the PSA and UPPI also noted that from 2013-2018, internal migration flow shifted to urban-rural migration for the first time. This change, along with those developed from years of massive internal and external movement of Filipinos, might pose fresh challenges to policymakers at all levels.

3. What Does the National Migration Survey Data Say about Migrants and Non-migrants?

The 2018 National Migration Survey is the first nationwide survey on migration in the Philippines. It was designed to provide a baseline information about Filipino migration. At the same time, it aims to assist policymakers and program managers to improve services for, and assistance provided to, Filipino internal or international migrants (PSA and UPPI, 2019).

3.1 Migrant Filipinos

Depending on the timeline, the NMS breaks down migration into different types: (1) migration that occurred between birth and the time of the survey, also known as Lifetime Migration; (2) migration experience of at least three months or more – the type of migration used in the analysis of the NMS; and (3) migration in the last five years. One limitation, however, is that Lifetime Migration masks the migration behavior of a certain person who resided elsewhere for some period of time but has the same current place of residence as the recorded usual residence of birthplace. To avoid such limitation, migration types (2) and (3) will be used in the subsequent parts of the paper.

Taking a look at these types of migrants, Table 1 shows that at the time of the survey, almost half of Filipinos migrated internally for at least three months. Moreover, from 2013-2018, while most are non-migrants, internal migration exceeded than international migration.

Table 1: Summary of Filipino Migration Experience as percentage of respondents in the 2018 National Migration Survey

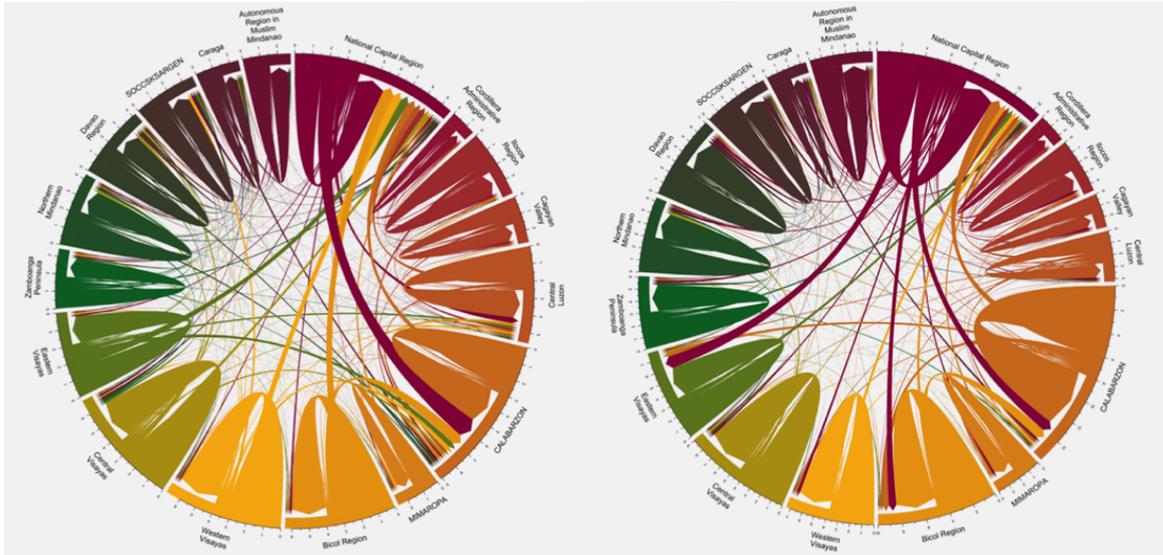
Migration Experience	Lifetime Migrants	Ever moved three months or more	Migration in the past five years
Internal Migration	40.1	48.7	12.5
International Migration	-	2.5	2.0
Both internal and international	-	4.0	0.3
Non-migrant	59.9	44.8	85.3
Total	100.00	100.00	100.0

Source: PSA and UPPI

The PSA and UPPI also noted that the largest migration streams involving more than a million inter-regional migrants are: (1) Bicol to NCR, (2) Eastern Visayas to NCR, (3) Western Visayas to NCR, and (4) NCR to CALABARZON (Figure 1, left). Central Luzon, Central Visayas, and Davao followed these two regions, each receiving at least one million in-migrants. On the other hand, Bicol, Eastern Visayas, NCR, and West Visayas are the top four origin regions, sending at least two million out-migrants each.

Compared with those recorded in the five years prior to the conduct of the NMS, recent figures indicate a slight change in migration observation. NCR, CALABARZON, Eastern Visayas, Bicol, and Davao received the largest number of in-migrants. Additionally, NCR, CALABARZON, Central Luzon, Bicol, and Northern Mindanao experienced the largest number of out-migrants (Figure 1, right).

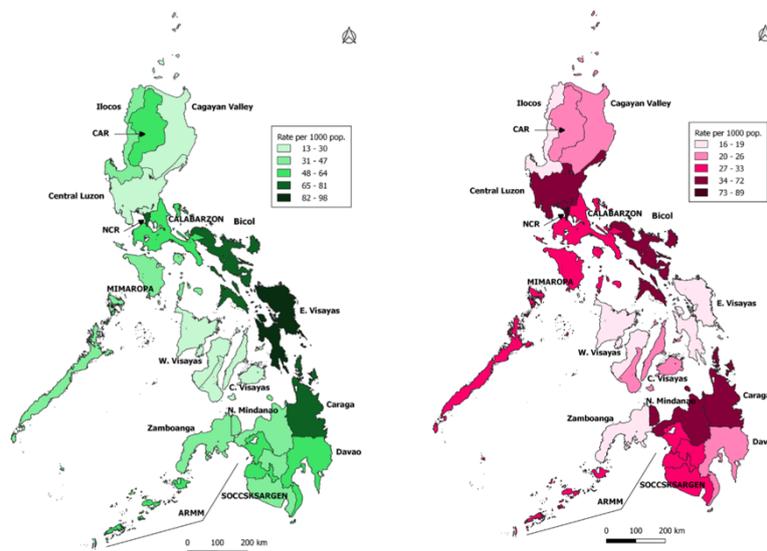
Figure 1. Migration stream for first-ever move (left) and from 2013-2018 (right)



Source: PSA and UPPI

The change in migrant-sending and receiving regions might indicate new developments in the regional economy. The PSA and UPPI also noted that the top two net migrant-gaining regions from 2013-2018 were Eastern Visayas and CALABARZON, and net migrant-losing regions were NCR and Central Luzon. The same period was also dominated by rural-rural flow at 48 percent and urban-urban flow at 46 percent (PSA and UPPI, 2019). This shift in migration patterns where people are going to the provinces might indicate increasing regional development (Figure 2).

Figure 2. In-migration (left) and out-migration (right) rates by region (in thousands), 2013-2018



Source: PSA and UPPI

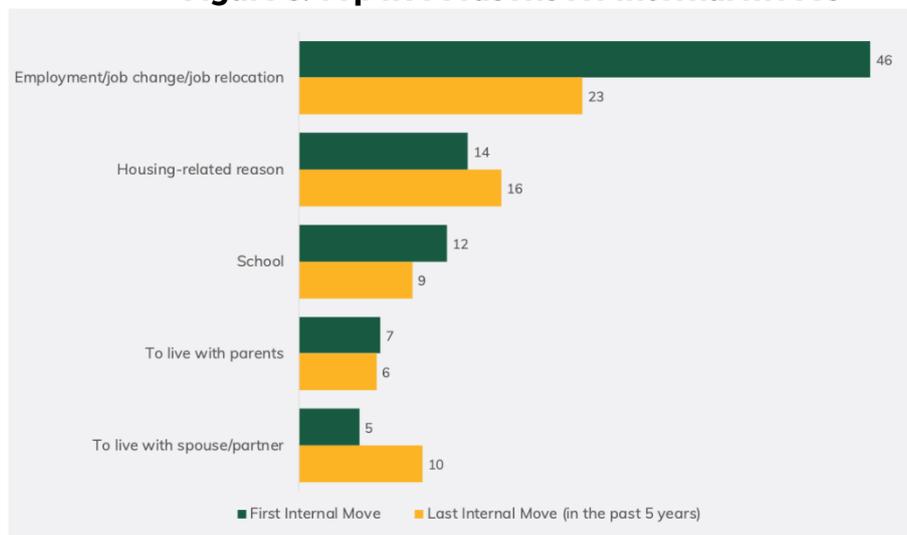
According to the NMS, Filipinos who have internal migration experience only are generally young people aged 20-29 years at 44 percent only followed by people aged 30-39 years at 22 percent. At the same time, most internal migrants are never married at 39 percent, followed by married and common-law/live-in

partners at 31 and 24 percent, respectively. Meanwhile, Filipinos with international migration experience only are dominated by females at 55 percent. Forty percent of international migrants only are aged 30-39, 27 percent are aged 20-29, and less than 1 percent are aged below 20. Majority of international migrants only are married or with common-law/live-in partners at 65 percent and only 27 percent are never married. Eighteen percent of international migrants only did not attend high school and 44 percent completed high school.

These foregoing trends are almost the same for those who both have internal and international migration experience. The two differentiating factors are education and socioeconomic class. Filipinos with both internal and international experience are more educated, with 65 percent having completed at least some college education as compared with 28 percent for internal migrants only. At the same time, almost 50 percent of Filipino migrants with both internal and international migration experience belong to households in the highest wealth quintile, while 40 percent belong to the middle wealth quintile, according to the PSA and UPPI. CALABARZON (21 percent), SOCCSKSARGEN (13 percent), and Bicol (10 percent) are the top three regions where these migrants came from.

Internal and international movement of Filipinos, whether first move or between 2013-2018, is mainly driven by employment (Figure 3). According to the NMS, 89 and 46 percent of first international and internal move, respectively, were driven by this motivation.

Figure 3. Top five reasons for internal moves



Source: PSA and UPPI

From 2013-2018, internal and international migration decreased with increasing age from 30.8 (internal) and 60.3 (international) percent of Filipinos aged 20-29 years migrating. On the other hand, only 7.6 (internal) and 12.9 (international) percent of respondents are aged 50 years and above. It is worth noting that unemployed (15.1 percent for internal and 21.7 percent for international) and those in a married and common law/live-in arrangement (29.9 percent for internal and 48.5 percent for international) moved more during the same period as compared with those employed and never married, respectively.

Almost half (47 percent) of internal migrants between 2013-2018 do not have kids, while 33 percent have children but are not living with them. Only 20 percent of internal migrants have children living with them. Male internal

migrants tend to leave behind their children to their spouse while female internal migrants tend to leave them to their parents. However, it is the opposite for international migrants. 51 percent have children living with them in the household, 31 percent with no children at all, and 17 percent with no children living with them during their last international move.

Internal movement in the country from 2013-2018 was mainly financed by personal savings (55 percent), followed by family (40 percent). International migration, on the other hand, was mainly financed by support from family at 40 percent and personal savings at 32 percent. The PSA and UPPI also found that 35 and 44 percent of internal and international migrants, respectively, noted that they were unable to cover their basic necessities before migrating.

While the financial situation prior to the move is not in a good picture, it may also be a risk for Filipinos to move if they are using their personal savings to finance it. With this situation, it is important that internal migrants must find quality jobs upon moving to a new location. The PSA and UPPI noted that prior to migration, Filipino internal migrants were primarily employed in the wholesale or retail trade industry (20 percent), other service activities (13 percent), and manufacturing (13 percent). Upon their move, majority of them landed jobs in agriculture, forestry, and fishing (19 percent).

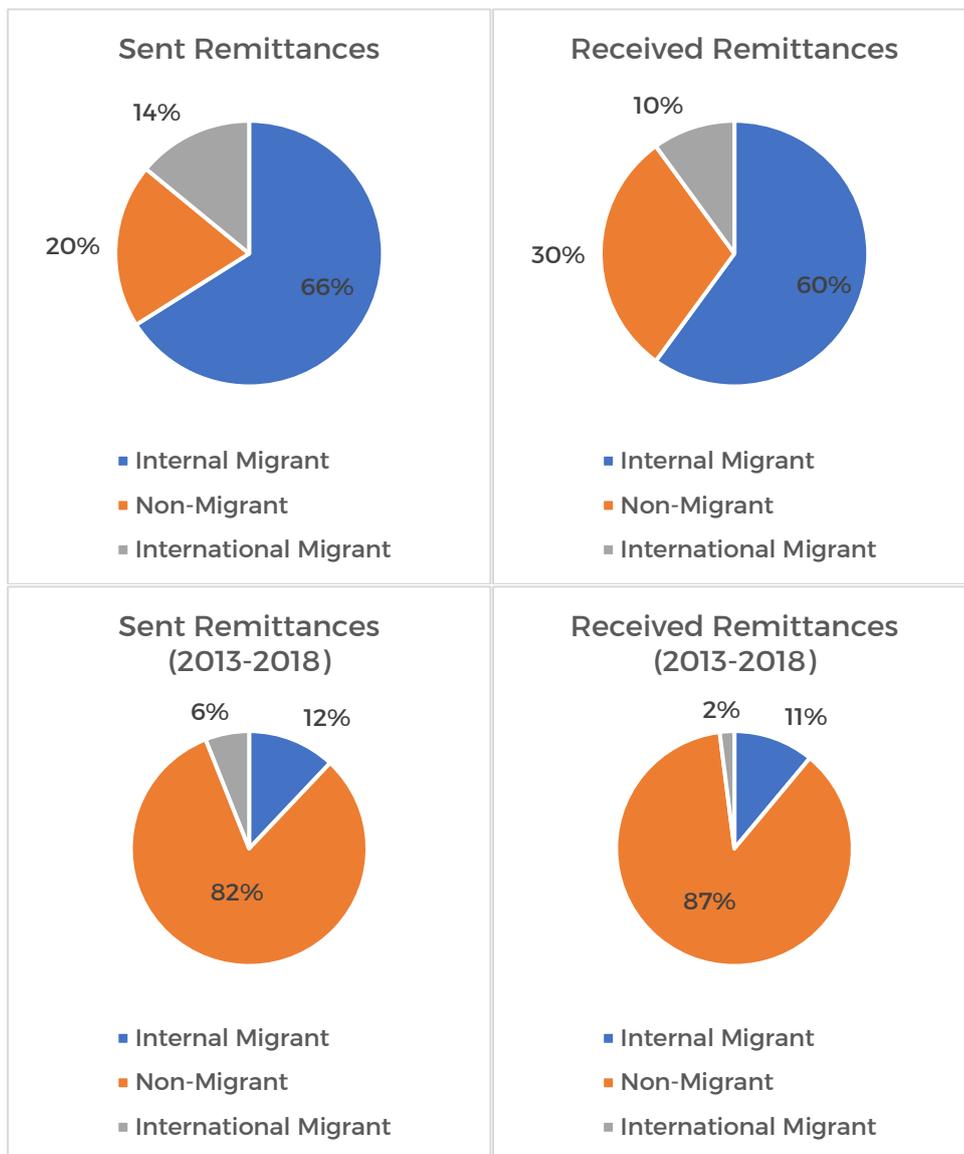
On the other hand, international migrants were previously employed as service and sales workers (24 percent) and elementary laborers (17 percent) in the manufacturing and wholesale or retail trade industries. Upon arriving in their first country abroad, 42 percent worked as elementary laborers in the service activities industry.

Among those surveyed who are currently employed, Filipinos who have internal migration experience only have an average and median monthly income of PhP 7,340.01 and PhP 5,000.00, respectively. Those who do not have any migration experience, however, have lower numbers at PhP 4,743.75 and PhP 4,100.00 for their average and median monthly salaries, respectively.

Data also show that majority of those who receive remittances in the past 12 months have at least an internal migration experience at 60 percent, followed by non-migrants at 30 percent (Figure 4). Among those with international migration experience, 66 percent have sent remittance within the past 12 months, followed by 20 percent by non-migrants.

It was the opposite in 2013-2018. Non-migrants either sent (82 percent) or received (87 percent) remittances during the last 12 months. Only 12 and 11 percent of those who internally migrated from this period have sent and received remittances, respectively (Figure 4). The turnaround of numbers might be due to the permanent settling down of internal migrants from 2013 or earlier, thus, recording them as non-migrants during the five-year period but are still considered lifetime migrants.

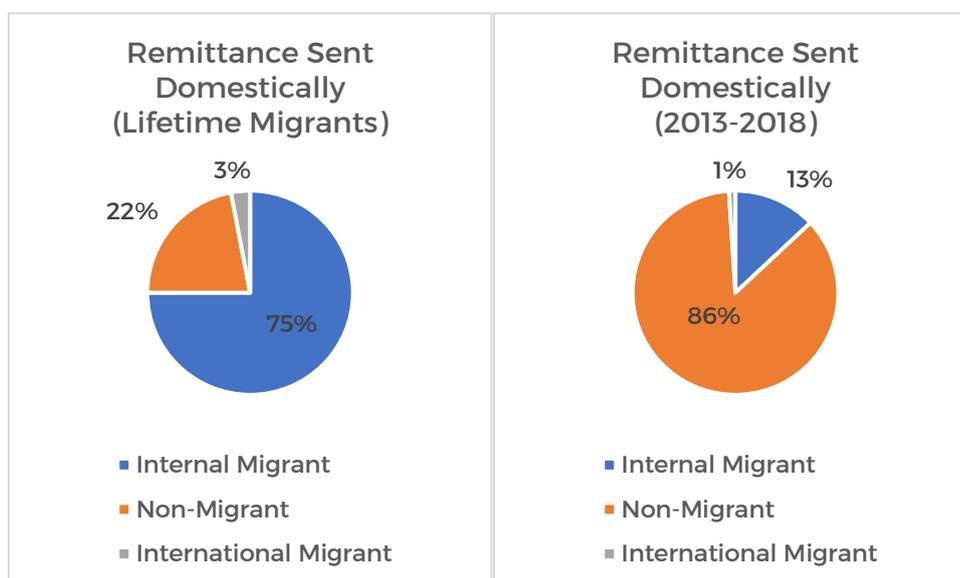
Figure 4. Remittance Behavior of Filipino Migrants and Non-migrants, 2013-2018



Source: Author’s calculation, PSA and UPPI

Remittances sent by migrants to the Philippines are mostly from internal or non-migrants. Data show that among those who were able to send remittance, 75 percent were lifetime internal migrants; 22 percent were non-migrants; and only 3 percent were international migrants. Moreover, similar to the preceding discussion, 2013-2018 remittance sent domestically was also dominated by non-migrants at 86 percent, followed by internal migrants at 13 percent and international migrants at 1 percent (Figure 5).

Figure 5. Remittance Sent Domestically by Lifetime and 2013-2018 Migrants



Source: Author's calculation, PSA and UPPI

The 2018 NMS shows the following demographics of those who received or sent a remittance for the past 12 months (Table 2). It is worth noting that at least 35 percent of those who sent remittances also received remittances. Thirty-one percent of them are also not employed nor have any source of income. Also, given that the domestic cash transfer has a median of PhP 5,000, a huge portion of the amount of remittance received by Filipinos might be coming from abroad.

Table 2: Summary of Key Demographics Among Those Who Received and Sent Remittances

Demographics	Received Remittance (18 percent of respondents)	Sent Remittance (10 percent of respondents)	Did not Receive (82 percent of respondents)	Did not Send (90 percent of respondents)
Average age	45	44	40	41
Married	51%	52%	46%	47%
At least high school graduate	58%	74%	49%	48%
Employed/ Business	51%	69%	56%	53%
With migration experience	70%	80%	56%	56%
In the Philippines 5 years ago	98%	97%	99%	99.99%

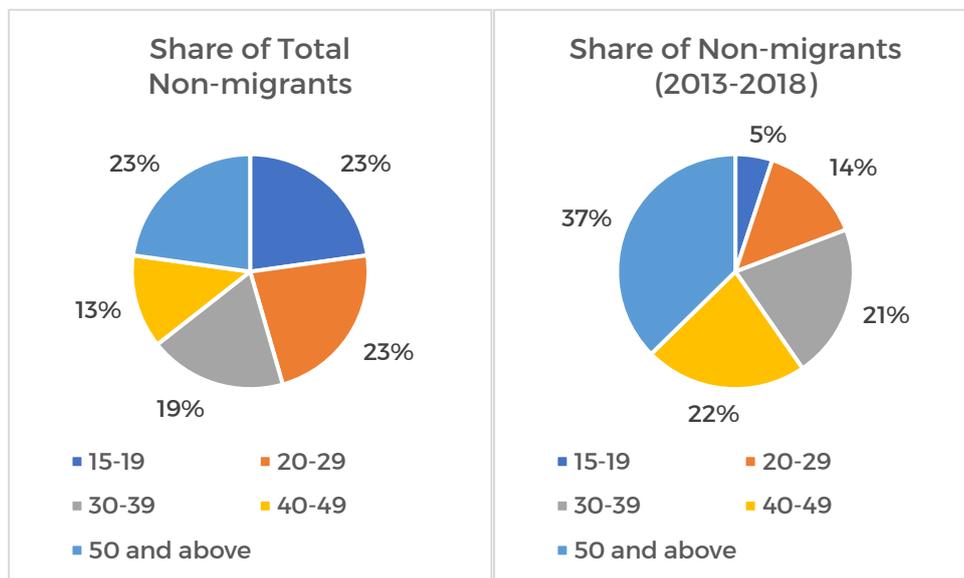
Demographics	Received Remittance (18 percent of respondents)	Sent Remittance (10 percent of respondents)	Did not Receive (82 percent of respondents)	Did not Send (90 percent of respondents)
Average (median) income in PhP	4,000(3,000)	9,000 (2,400)	4,150(3,200)	3,500(3,000)
Moving in the next 5Y	17%	23%	12%	12%
Reason for moving next 5Y	Job (41%) Housing (23%)	Job (40%) Housing (15%)	Job (49%) Housing (23%)	Job (48%) Housing (23%)
Reason for staying next 5Y	Housing (34%) Living envi (25%) Job (13%) Live w/ child (4%)	Living envi (63%) Housing (44%) Live w/ child (39%) Job (27%)	Housing (32%) Living envi (25%) Job (17%) Live w/ child (4%)	Housing (32%) Living envi (24%) Job (15%) Live w/ child (4%)
Average (median) monthly remittance received/sent	54,000 (10,500)	26,000 (5,000)	-	-

Source: 2018 National Migration Survey data set

3.2 Non-migrant Filipinos

The National Migration Survey reported limited information about non-migrants. However, using the raw survey data from the PSA, 45 percent of the population had not yet moved within or outside the country in their entire life as of 2018. These groups of non-migrants were almost equally spread among all age groups 15-19, 20-29, 30-39, and 50 years and above with 23, 23, 19, and 23 percentage shares, respectively. Only the age group 40-49 years registered a share significantly lower than the rest at 13 percent. This might indicate that most Filipino migrants were those born between 1969 and 1978. If this is the case, assuming that a typical migrant moves at the age of 20-29 years, the 2018 population of the Philippines mostly moved between 1989-1998. More than half of non-migrants did not finish high school education and married at 55 percent and 51 percent, respectively.

Non-migrants from 2013-2018, however, were in the oldest age group, 50 years and above, at 37 percent. It is followed by aged 40-49 years at 22 percent, then aged 30-39 years at 21 percent. Only 14 percent were aged 20-29 years and 5 percent for aged 15-19 years. A large number of non-migrants during this period also did not finish high school education at 43 percent, and majority were in a marital union (married at 56 percent and common-law/live in at 12 percent). They were almost equally distributed between urban and rural areas with the former having 49 percent and the latter having 51 percent. Three out of 10 non-migrants resided in NCR and CALABARZON. They were nearly equally distributed across the five wealth quintile categories of the PSA.

Figure 6. Share of Non-migrants between age groups

Source: Author's calculation, PSA and UPPI

Monthly remittance received by a Filipino individual without migration experience has an average of more than PhP 37,000 and a median of PhP 10,000. However, those who did not migrate from 2013-2018 have an average of more than PhP 49,000 and the same median remittance of PhP 10,000 per month. Moreover, Filipinos without migration experience almost share the same behavior as non-migrants from 2013-2018 as to the use of received remittance. They are using it on food (76 percent), education (39 percent), and medical expenses (25 percent). Only eight (8) percent of non-migrants use remittance for savings and four (4) percent for investments.

4. Methodology and Results

This paper attempts to measure the impact of migration from 2013-2018 on members of the household left behind using the microdata of the 2018 National Migration Survey. This paper focused on analyzing households with members aged 5 to 22 years old. To isolate the impact of migration from 2013-2018, only households who moved for the very first time within the period were considered. A total of 8,123 households from the 33,330 interviewed households were used in this study.

One of the main assumptions of this paper is that the 5- to 22-year-old members of the household are usually left behind since they are expected to dedicate their time to study. It is also assumed in this paper that household members in this age group are continuously or have started studying beginning 2013 given that primary to tertiary education is accessible since tuition fees are waived in all state-owned educational institutions in the Philippines.

The NMS provides data on individuals who migrated for the very first time from 2013-2018; and the number of studying household members. With this, it is possible to model the impact of migration in terms of the change in the percentage of studying household members aged 5 to 22 years old from 2013-2018.

To calculate the number of studying household members for the 2013 base year, the author subtracted 5 years from the indicated years of education on those currently studying 5- to 22-year-old members of the household. If the resulting difference is negative, it means that the member has not yet started studying in 2013. Moreover, to account for those who graduate or stopped studying, an assumption was made if they are studying in 2013 based on the years of schooling indicated in the NMS. For example, if an individual indicated to have graduated high school in 2018 but is not currently studying, it is assumed that he/she is studying 5 years prior. The combined data generated for the base year and the existing set in the NMS for the year 2018 generated 16,246 observations.

A Difference-in-Differences (DiD) approach is used to evaluate the impact of migration in terms of the number of household members studying from 2013 and 2018. The DiD model used is as follows:

$$Y_{igt} = \beta_1 M_i + \beta_2 t + \delta M_i t + \alpha_g + \theta_t + \varepsilon_{igt} \quad (1)$$

Y_{igt} is the percentage of household members studying aged 5 to 22 years old in 2013 and 2018. M_i constitutes a binary variable denoting exposure of the household, with a member from 5 to 22 years old, to migration of a family member by taking the value $M=1$, and $M=0$ for those who did not experience migration. t constitutes a binary variable taking the value of 0 for baseline measure in the year 2013 and 1 for migration measure in the year 2018. β_1 , β_2 , and δ are the coefficients to be estimated. α_g is a time-invariant group-level fixed effect capturing the difference between the treatment and comparison groups that are time-invariant. θ_t is the time-invariant fixed effect capturing constant effects related to each period, and ε_{igt} is the error term. The model is clustered among the 17 regions of the country to adjust the standard error and remove possible correlation between the number of studying and the economic situation of the area. No control variables were used in the model due to data limitations.

Using equation 1, results show that the DiD estimates indicate that the percentage of household members between ages 5 and 22 years old who are studying is lower for households who experienced migration than for those who did not move (Table 3). This might indicate that migration in general lessens the number of school-aged children studying in a household. The paper also found the same negative result if the age group is narrowed down to 5 to 18 years old.

Table 3: Difference-in-Difference Results Using Migration As Treatment

Variable	Studying (Y_{igt})	Studying (Y_{igt})
	5 to 22 years old (in percent) No. of Observations = 16,246	5 to 18 years old (in percent) No. of Observations = 14,190
Migration ($M_i t$)	-4.119*** (0.827)	-2.373*** (1.011)
Pre/post-migration measure (t)	8.169*** (1.105)	12.570*** (1.002)
Migration (M_i)	-1.626*** (0.803)	-1.167 (0.700)
Constant	72.347*** (0.973)	73.961*** (0.944)

Standard errors are in parenthesis

*** $P < 0.05$

** $P < 0.10$

Source: Author's calculation

Based on the literature, male and female migrants have different behaviors in terms of allocating their remittances. At the same time, children of migrant mothers

have lower performance in school. To further examine the general impact of migration, the paper then substitutes if the household has female or male migrant separately as the new M_i . This is to measure the individual impact of migration depending on the sex of the migrant. Results show that female migration generated a higher significant negative impact on the percentage of studying household members aged 5 to 22 years old than male migration (Table 4).

Table 4: Difference-in-Difference Results Using Male and Female Migration As Treatment

Variable	Studying (Y_{igt})	
	No. of Observations = 16,246	
	Male	Female
Migration ($M_i t$)	-2.852** (1.668)	-3.205*** (1.448)
Pre/post-migration measure (t)	7.437*** (1.011)	7.507*** (1.121)
Migration (M_i)	-1.498 (1.043)	-1.448 (0.973)
Constant	72.109*** (0.905)	72.112*** (0.965)

Standard errors are in parenthesis

*** $P < 0.05$

** $P < 0.10$

Source: Author's calculation

5. Discussion

Based on the DiD results, migration has a negative impact on the percentage of school-age members of the household who are studying. An important finding of this paper is that households having at least a female migrant tend to have a higher significant negative impact than those with a male migrant. These results extend the findings of Tarroja and Fernando (2013) about the negative effect on the school performance of the children of OFWs, particularly of OFW mothers. Since the method in this paper incorporates both internal and international migration, the results give a fuller view of the general impact of migration on household members left behind specifically on children aged 5 to 22 years old.

The suggested impact might stem from the conclusions about the “skip generation households” and the complacency of household members left behind by migrants as earlier discussed in the literature. Migration, especially of parents, leads to less monitoring on their children’s well-being. In the NMS, respondents with international migration experience had an average of around 2 children left behind during their first international move. Additionally, the NMS noted that internal migrants often leave their children to their spouse (if male) or parents (if female). The difference between who takes care of the children of the female or male migrant can also be considered as a factor regarding the results of the DiD.

While several papers noted the positive implications of migration through increased remittances and household income in the Philippines such as those of Acosta, et al. (2007) and Pernia (2008), it is possible that it does not guarantee sending children aged 5 to 22 years old to school. Migrants often allocate their remittances more on food than educational expenses. In particular, female migrants, who generally receive lower salary than men (Asian Development Bank, 2013), send 59 percent of their remittance for food and only 28 percent for education. In contrast, male migrants allocate a higher

percentage with 65 percent on food and 33 percent on education expenses (PSA and UPPI, 2019).

Although migrant families tend to have higher spending capability than non-migrants due to remittances, this might still be a disadvantage because this additional income generated by a migrant is not allocated on assets that would make those left behind become more productive when they enter the labor force in the future. At the same time, even when household income increase, it might not compensate the loss of guidance that children of migrants experience.

These findings coupled with the conclusions of Cabegin (2006), Acosta, et al. (2007), Rodriguez and Tiongson (2001), Tullao, et al. (2007), and Pernia (2008) on the complacency of the family members of migrants to participate in the workforce, and the observation of Tarroja and Fernando (2013) on the performance of children of OFW mothers, have important implications for the population's educational attainment, especially if women – who are more migratory than men – continue to dominate migration numbers in the Philippines.

6. Conclusion

This research attempted to measure the impact of migration in terms of the percentage of household members studying aged 5 to 22 years old using a DiD approach on the 2018 National Migration Survey. Results show that migration has a negative impact on the number of studying members of a household.

A major finding of this paper is that the negative impact of both internal and international migration, in terms of making more productive household members, is driven primarily by female migrants in the household. This observation is in line with the conclusion of other studies about the negative impact of having migrant mothers. The difference in allocation of remittances on household expenses between male and female migrants might help explain the results of this paper.

This study has several limitations. First, data is limited only to the result of the 2018 NMS. No prior or succeeding surveys about migration were done by the Philippine Statistics Authority and the University of the Philippines Population Institute. Second, since the NMS is a baseline measure of migration in the Philippines, other variables and methodologies that were considered to measure the impact of migration were not possible. The assumptions and computations of the study to arrive at the 2013 base year were based from the questions of the survey. Lastly, some questions in the survey were retroactively asked rendering some variables incomplete.

This paper recommends the conduct of additional national migration surveys and adding a wider set of questions to generate more data to measure the impact of migration on different angles. Once more data is available, other impact evaluation methods are recommended for further analysis. The results of this study, together with these recommendations, could better guide policymakers on addressing the different aspects of migration and its impact on those they left behind.

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