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A Repeated Cross-Section Analysis of Poverty Mobility Through Education in the Philippines

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Poverty has been persistent in most developing economies. In Southeast Asia, poverty is deemed as the basket case, and its eradication has been the overarching goal of governments. In the Philippines, it has posed a long-standing struggle since previous administrations have initiated programs to rapidly address the problem. Poverty in the Philippines has been characterized by unequal income distribution indicating that Filipino households in the lower income decile are vulnerable to impoverished living conditions as a consequence of depravity from basic necessities. This is even worsened by the susceptibility of poor households to income shocks that have encumbering effects driving poor households to engage in risky moneymaking schemes that have negative, irreversible consequences pushing them deeper into poverty (Albert & Ramos, 2010).

Schelzig (2005) cited the nonmonetary categories enumerated by the International Labor Organization (ILO) that define who the poor are—food, water and sanitation, health, education, and shelter. In 2014, according to the Philippine Statistical Authority (PSA, formerly National Statistics Office

[NSO]), the share of food and nonalcoholic beverages to total household expenditures is 41.2%, increased by 4% from 2013 figures. This shows that households put priority on food in consumption spending (Reyes, 2001).

The PSA and National Statistical Coordination Board (NSCB) are employing different measures to assess the depth of poverty—poverty incidence, poverty gap, Gini coefficient, headcount rations, and income and expenditure ratios. All these measures capture the traditional measure of welfare—income (Schelzig, 2005). To address the limitations of these measures, the National Academic Press (n.d.) calls for the revision of these measures to come up with more indicative measure of poverty. That is, poverty measures should have the following four characteristics:

1. Poverty thresholds should represent budget for basic necessities: food, clothing, shelter, utilities, and a small additional amount to allow for other needs such as household supplies, personal care, and non-work-related transportation.
2. Using actual consumer expenditure data that must be updated annually to reflect changes in expenditures on basic necessities over the past three years, a threshold for a reference household type can be estimated.
3. This threshold for a reference household type must also be fine-tuned to reflect the needs of various household types and to capture geographic differences in costs.
4. Household resources should be defined as the total monetary and nonmonetary income from all sources available for expenditure, minus expenses that cannot be used for consumption spending (i.e., income and payroll taxes, childcare, work-related expenses, child support transfers to another household, and out-of-pocket medical care costs).

Beyond economic factors, poverty exists because it is a consequence of displaying antidevelopment traits, values, and attitudes (i.e., refusal for improvement and resistance to change). This implies that the poor are responsible for their predicament due to their perspective of their standard of living (Abad & Eviota, 1983). Bennett (2008) reinforces this by saying that poor people continue to behave irrationally, limiting them to escape their impoverished state. Spears (2010) elaborated on this by claiming that the poor have developed a set of belief systems that is adaptive instead of responsive and that creates a broadened poverty culture. This poverty culture has the tendency to perpetuate in the succeeding years making it difficult for households to escape poverty (Abad & Eviota, 1983). Hence, it is interesting

to know if Filipino culture is a propoverty culture to explain why poverty in the country is persistent.

As such, we will investigate the mobility of households in and out of the poverty threshold. This will allow us to rationalize why households move from one state to another or remain in the status quo. In this study, we are interested to know if education and demographics are vehicles by which households will move from one state to another. To address this research agenda, the following specific objectives are set:

1. To identify the probability that a household will remain in its current socioeconomic status (poor, nonpoor) or move to another state;
2. To provide a behavioral description why a household retains or shifts socioeconomic status by looking at their educational attainment; and
3. To generate recommendations on how poor households can increase the probability of moving out of poverty.

Through this study, we can determine the magnitude by which education can allow a household to escape poverty. This study is important to the government in their formulation of antipoverty initiatives through education. Meanwhile, this study is useful for households because this will emphasize the value of education in uplifting them from poverty. Results can provide a framework to policymakers to address to craft programs that can address poverty by promoting and sustaining household welfare.

Characterizing Poverty in the Philippines

The Philippines has been keen on pursuing poverty alleviation. However, initiatives aimed to address the issue has been hindered by the recent global crisis in 2008, tireless allegations of corruption (i.e., the Disbursement Acceleration Program in 2014), incessant natural calamities (i.e., Typhoon Bopha in 2012, Typhoon Haiyan in 2013, the magnitude 7.2 Bohol earthquake in 2013), and rising prices of basic commodities. The aftermaths of these recent events make it more difficult to reduce poverty incidence; instead, it has been pulling more households into poverty.

In 2012, a household with five members will need PHP 7,890.00 of monthly income to afford their minimum basic food and nonfood requirements (see Table 1). For poverty incidence, Table 1 shows that 19.7% of Filipino households were poor in 2012 (insignificantly lower than the estimates in 2009 and 2006). It can be seen that the proportion of poor households has been practically unchanged between 2006 and 2012, but the

estimated number of poor households increased from 3.81 million in 2006 to 4.21 million in 2012.

Table 1. Full Year Thresholds, Incidences, and Magnitude of Poor

Year	2006	2009	2012
Monthly poverty threshold for a family of five (PHP)	5,566	7,030	7,890
Poverty incidence (%)			
Families	21.0	20.5	19.7
Population	26.6	26.3	25.2
Magnitude of poor (in millions)			
Families	3.81	4.04	4.21
Population	22.64	23.30	23.75

Source: 2012 Full Year Official Poverty Statistics, National Statistical Coordination Board.

Other poverty measures worth looking at are the *income gap* (average income shortfall of the population from the poverty threshold), *poverty gap* (total income shortfall of the population from the poverty threshold), and *squared poverty gap* (squares the poverty gap for each household putting more emphasis on observations that fall far short of the poverty line rather than those that are closer).

In 2012, the income gap was estimated at 26.2% (see Table 2). Such information is useful to determine the required budget to reduce poverty in the country. That is, on the average, a poor household with five members needed a monthly additional income of about PHP 2,067.00 to get out of poverty. On a macro level, suppose the government will deliver cash transfers to all poor households needed to cross the poverty line, a total of PHP 124 billion in 2012 is needed to alleviate poverty, exclusive of targeting costs (Note: the budget allocated for conditional cash transfers [CCT] for 2012 is PHP 39.4 billion). From 2003 to 2012, all these poverty measures have all improved but insignificantly.

Table 2. Income Gap, Poverty Gap, and Severity of Poverty

Year	2003	2006	2009	2012
Income gap	27.7	27.5	26.2	26.2
Poverty gap	5.6	5.8	5.4	5.1
Squared poverty gap (severity of poverty)	2.2	2.2	2.0	1.9

Source: 2012 Full Year Official Poverty Statistics, National Statistical Coordination Board.

Figure 1 illustrates the striking characteristic of poverty in the Philippines according to Reyes, Tabuga, Mina, Asis, and Datu (2010)—income inequality across regions. Illustrated in Figure 1 are the thematic maps of the 2012 income gap, poverty gap, and squared poverty gap. Red shades indicate comparatively worse off areas than green shaded areas. Provinces that are worst off are situated in Visayas and Mindanao.

Eastern Samar has consistently displayed one of the worst values of income gap, poverty gap, and severity of poverty. Likewise, these poverty measures have been unswervingly high in provinces within the Caraga, Zamboanga Peninsula, and Central Mindanao regions. Note that these areas have been highly rural. These maps also highlight the veracity that poverty is a geographical issue that calls for antipoverty programs that prioritize regions with significantly worse conditions.

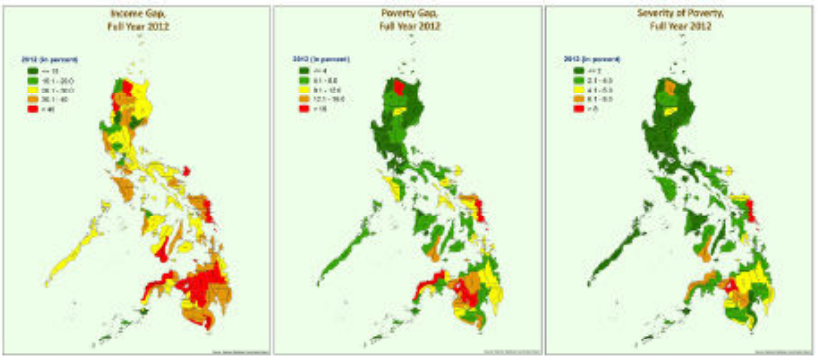

Figure 1. Thematic map of 2012 income gap, poverty gap, and severity of poverty. Source: 2012 Full Year Official Poverty Statistics, National Statistical Coordination Board.

National averages are not indicative of the astounding regional, provincial, rural, and urban variations as seen from Table 3 (Schelzig, 2005). This validates the need for policies that accounts for regional and provincial profiles to create a strategic distribution mechanism to potential key areas. This can build a more socioeconomically equal society. The regions with the lowest poverty incidence among families in 2006, 2009, and 2012 continue to be the rural areas of the National Capital Region (NCR), Central Luzon, and CALABARZON (Cavite, Laguna, Batangas, Rizal, and Quezon). Meanwhile, rural areas like the Autonomous Region in Muslim Mindanao (ARMM), Zamboanga Region, and Caraga consistently registered the highest poverty incidence among households.

Table 3. Annual per Capita Poverty Threshold and Poverty Incidence Among Families

Region	Annual per Capita Poverty Threshold (PHP)				Estimated Poverty Incidence Among Families			
	2003	2006	2009	2012	2003	2006	2009	2012
Philippines	10,976	13,357	16,871	18,935	20.0	21.0	20.5	19.7
NCR	13,997	15,699	19,227	20,344	2.10	2.9	2.4	2.6
CAR	10,881	14,107	17,243	19,483	16.10	21.1	19.2	17.5
Ilocos	11,791	14,107	17,595	18,373	17.8	19.9	16.8	14.0
Cagayan Valley	10,350	13,944	17,330	19,125	15.2	21.7	20.2	17.0
Central Luzon	12,771	14,422	18,188	20,071	9.4	10.3	10.7	10.1
CALABARZON	12,394	13,241	17,033	19,137	9.2	7.8	8.8.	8.3
MIMAROPA	10,398	12,645	15,613	17,292	29.8	32.4	27.2	23.6
Bicol	11,476	13,240	16,888	18,257	38.0	35.4	35.3	32.3
Western Visayas	10,548	12,684	15,971	18,029	23.5	22.7	23.6	22.8
Central Visayas	11,798	13,963	16,662	18,767	32.1	30.7	26.0	25.7
Eastern Visayas	9,850	12,520	16,278	18,076	30.2	33.7	34.5	37.4
Zamboanga Peninsula	9,642	12,743	16,260	18,054	40.5	40.0	39.5	33.7
Northern Mindanao	10,501	12,917	16,878	19,335	32.4	32.1	33.3	32.8
Davao	10,737	13,389	17,120	19,967	25.4	25.4	25.5	25.0
SOCCSKSARGEN	10,277	13,319	16,405	18,737	27.2	31.2	30.8	37.1
Caraga	10,355	14,324	18,309	19,629	37.6	41.7	46.0	31.9
ARMM	9,664	12,647	16,683	20,517	35.0	40.5	39.9	48.7

Source: 2012 Full Year Official Poverty Statistics, National Statistical Coordination Board.

Root Causes of Poverty

Developing economies like the Philippines have been heedful to eradicate poverty. However, the rate at which poverty incidence is being lessened has been slow compared to other neighboring economies like Cambodia, Indonesia, Malaysia, and Vietnam, whose annual real gross domestic product (GDP) growth rate is lower than the Philippines. These economies, according to the UNDP, have outperformed the Philippines in reducing poverty for the past 20 years because of the incapacity of economic growth to trickle down to the poor. Although the economy is experiencing growth, it is not propoor. It can be implied that the economy is not creating the necessary employment resulting to insufficient income for the poor that further reduces their opportunity to fight poverty (Aldaba, 2009).

Rapid Population Growth

Rapid population growth also contributes to poverty (Rivera & See, 2012). That is, the larger the family size is, the greater is the household's likelihood of being poor (Schelzig, 2009) because an additional family member means an additional mouth to feed making the allocation of a usually meager income lesser (Schelzig, 2005). Also, high fertility is associated with the decline in human capital investments (Orbeta, 2002).

Rapid population growth hampers economic development for two interrelated reasons. First, it reduces per capita income, since the people, especially the poor, cannot sacrifice basic commodities; their savings and resources for investment in productive capacity are reduced. This will sequentially decrease overall economic growth and increase poverty (Schelzig, 2005). Second, rapid population growth will eventually exceed the rate at which industries can absorb new labor—the outcome will be more unemployed individuals negatively affecting the development of the economy. In a decade, the country's labor force would have increased by more than 50% and even the total labor force participation would have increased due to the higher participation of women in the labor force. Even with Filipinos choosing to work abroad, unemployment rates are still high (Aldaba, 2009). With the increasing number of poor households in the country together with persistent government budget deficits and increasing labor force, rapid population growth is a problem that must be addressed to combat poverty (Schelzig, 2005).

Underdeveloped Agricultural Sector

According to PSA, in 2013, the share of employment in agriculture to the total employment is 31%, where most of the laborers are considered poor. The Annual Poverty Indicator Survey (APIS) of the PSA, using the bottom 40% income range as a proxy for the poor, revealed that more than 50% the poor are employed in agriculture (i.e., laborers and farmers) (Schelzig, 2005). Poverty arises because they are working in jobs with low income and low productivity. If these sectors are improved (i.e., transform agriculture from subsistence to commercial farming), it will create more meaningful and quality jobs to individuals who need it most (Aldaba, 2009).

In relation to agriculture, the existence of inequitable land distribution compounds the problem of poverty (Deininger & Squire, 1998). That is, an economy troubled with high inequitable land distribution will likely exhibit lower income growth in the long run and a slower rate of poverty reduction than an economy with more equitable land distribution initially. Apparently, inequitable land distribution has been the Philippines' problem for many decades.

External Economic Shocks

Economic shocks from the external economy may also contribute to difficulties in poverty alleviation. One of which is a financial crisis. For the case of the Philippines, the recent financial crisis (in 1997 and 2008) contributed to the slow pace of poverty reduction. The Philippine economy may have recovered from these crises, but it has greatly affected the trade and manufacturing sectors of the economy—the lifeblood of developing economies. Poverty incidence was also exacerbated by high inflation rates brought about by the crisis (Aldaba, 2009). Consequently, the poor faces rising prices of food commodities succumbing them to worse living standards as they reallocate income on food by diverting household resources from education and health care (Son, 2008).

Income Inequality

The Philippines is also addressing income inequality. Data from the World Bank (http://data.worldbank.org/indicator/SI.POV.GINI) reported that the economy's Gini coefficient in 2012 is at 43.0 (decrease from 45.8 in 2006 and 46.8 in 1991). This indicates that unequal income distribution has improved, and it is better than Malaysia (46.2 in 2009) and Singapore (47.8 in 2009). However, the Philippines underperformed compared to other developing economies in Southeast Asia: Cambodia (31.8 in 2011), Indonesia (38.1 in 2011), Lao PDR (36.2 in 2012), Thailand (39.4 in 2010), and Viet Nam (35.6 in 2012). However, these figures may be misleading because one major shortcoming of poverty measures, according to Schelzig (2005), is its extreme sensitiveness to the poverty threshold due to the large number of individuals in the initial deciles. That is, slight adjustments to the poverty line can result to sizable adjustments to the number of individuals defined as poor.

From Figure 1, it was construed that poverty is a geographical issue evidenced by the wide disparity in the standards of living and human development across regions. According to Balisacan (2003) and Aldaba (2009), intraregional inequality contributes 82% of overall inequality. Hence, antipoverty policies must improve distribution at the regional level instead of the national level.

Natural Calamities and Social Conflicts

Social conflicts worsen poverty incidence since these hinder households from doing economic activities, disrupt access to basic services, and devastate transport systems and life in general as households are displaced from their residences and income sources. These conflicts also result to disablement,

deaths, and loss of household heads, thereby increasing a household's dependency burden. Concisely, it affects households' access to all forms of capital—physical, natural, social, financial, and human (Schelzig, 2005). Similarly, natural calamities also result to higher poverty incidences because its occurrence affects mostly standard of living of the poor. They experience more losses since their sources of income and health is most likely reliant on the environment (Aldaba, 2009).

Behavioral Factors

Other than economic factors, it is also critical to look at behavioral and social factors in explaining why poverty is persistent. In an empowerment study in Chile by Guzman, Irarrazaval, and de los Rios (2014), personal initiative and responsible work were relevant factors for an individual's economic success. Also, laziness and lack of initiative are also contributing factors to poverty incidence. Hine, Montiel, Cooksey, and Lewko (2005) affirmed this finding when they also considered laziness and the lack of effort as causal factors of poverty. Laziness can be ascribed to the lack of drive and the reliance of the poor to uplift their economic situation. Moreover, Montecillo (2015) also stated that instant gratification (i.e., happiness derived from impulsive decisions) is one of the traits most Filipinos possess. This might explain why most Filipinos habitually execute any task the quickest and easiest way possible. Instant gratification is also supported by the collective notion that most Filipinos are also impatient. As cited by Spears (2010), a lower level of income will likely entail a higher tendency of impatience, *ceteris paribus*. This behavior has been observed to be the source of the tendency for Filipinos to blame others for the lack of progress and development they are experiencing in their personal lives. It follows that the Filipinos, mostly the poor, blame the government for their condition. Similarly, Bennett (2008) stated that as the state aids the poor more, the latter are less likely to work for themselves–to fend for themselves. Thus, Sebastian (2014) argued that those who live in impoverished areas have developed dependency on the government and entitlement mentality. Most of the poor strongly believe they are entitled to receive government benefits and privileges instead of being solely responsible for their own lives.

Chronic and Transitory Poverty

In every economy, there exists a significant amount of individuals who endure low socioeconomic status. There are households who have been obstinately chained to poverty for a long period of time. They are categorized under chronic poverty. Often, chronic poverty is extensive in low-income

economies. On the other hand, there are households who are classified as poor for a time period and then move in and out of poverty. They are categorized under transitory poverty. For both cases, poverty is a distinct phenomenon associated with low asset holdings, low income-generating activities, and disadvantageous demographic characteristics (McKay & Lawson, 2003).

Regardless of the category, there is a need to alleviate them from poverty and reduce the chances that they will return to their impoverished state. To do this, there is a need to understand why households remain or move in and out of this predicament. In understanding such, policymakers can design policies on how they can permanently stay out of poverty. Ribas and Machado (2007) organized the understanding of chronic and transient poverty in the literature through three angles. The first category focuses on the duration of being poor. A household is deemed to be chronic poor if the levels of their per capita income or per capita consumption are constantly below the poverty line. It is considered transient if the levels fluctuate above and under the poverty line (Gaiha & Deolalikar, 1993). The second category highlights the components of income or consumption. The constant component is the determinant of chronic poverty while the fluctuating component reflects transient poverty (Jalan & Ravallion, 1998). The third category focuses on the variability of current income that will imply a household's vulnerability to poverty (Pritchett, Suryahadi, & Sumarto, 2000).

According to McKay and Lawson (2002), chronic poverty is characterized as the unfavorable condition of households in terms of their human capital, demographic composition, geographical location, physical assets, and occupational category. For human capital development, acquiring higher education has been continuously being evaluated to reduce the likelihood of households being subjected to chronic poverty. The geographic location of households also plays a role in determining chronic poverty due to the lack of available opportunities, supply of health, and education in certain locations (McKay & Lawson, 2002). A large household size and lack of physical assets also make it difficult for households to get out of poverty (Rivera & See, 2012).

Meanwhile, such characterization for chronic poverty may also hold true for transient poverty; however, the analysis would differ because of its impermanence. The analysis can include the role of government transfers, inherent seasonality of economic activities, and adverse price movements. According to McKay and Lawson (2002), empirical evidences suggest that transient poverty is due to households' failure to insure themselves sufficiently against fluctuations in their income sources and changes in living conditions (e.g., additional member of the household, death of an income-earning member).

Looking at the case of a developed economy like the United States of America (USA), low human capital, minority status, and geographic locations (i.e., rural south) are their poverty determinants (Mills & Mykerezi, n.d.). For developing economies in Latin America, it has been observed that there are cohorts that are likely to be poor relative to others. Those cohorts were identified to be of African descent (minority affiliation) and other indigenous population, whose household sizes are large with members who have little schooling—categorical indications of households under poverty (World Bank, 2003). Specifically, in Brazil, low educational attainment is the likely cause of poverty (Ribas & Machado, 2007).

Distinguishing between chronic and transitory poverty allows us to understand how households match their income generation capabilities with their spending requirements. This will suggest antipoverty programs taking into consideration the type of problem being addressed. Addressing the encompassing concept of poverty on a macro level results to interventions being futile.

Poverty Mobility

Balisacan and Fuwa (2004) scrutinized the geographical concentration of chronic and transient poor in the Philippines. Results showed that chronic and transient poor are high in Mindanao. It was then concluded that the welfare of the poor tends to be lower in areas with political dynasties relative to areas with political competition. Poverty was also assessed through the profile of household heads. Results showed that chronic poverty has been evident in households with male-headed households who are high school graduates and are involved in the agricultural sector. This calls for policies to advance the agricultural sector to foster broad–based growth.

Panganiban (2010) decomposed poverty using the Cebu Longitudinal Health and Nutrition Survey. Poverty was examined by relating socio-economic status to household head characteristics. Significant correlation has been established between poverty, settlement factors, household dependency burden, mother's age, and work in the farming sector. Analysis has shown that chronic poverty exists in the agricultural sector especially among those who are contractual and wage earners. The time dimension of poverty was also considered—children inheriting their parents' impoverished living conditions. If parents can readily borrow and support human capital investments for their children, then the vicious cycle of poverty could be stopped.

Reyes, Tabuga, Mina, and Asis (2011) studied the movement of Filipino households in and out of poverty by examining per capita income and its movement along the poverty threshold. Findings showed that from 2003 to

2006, there were numerous poor households that were subjugated further under the poverty threshold due to significant reductions in income. It is important to emphasize that income is one of the most notable and quantitative measure of households' capacity to meet daily needs. Descriptive statistics revealed that income from entrepreneurial activities, especially from agriculture, is the major component of total income of the chronic poor while income from nonagricultural sources significantly comprises the income of the nonpoor.

The Food Aspect of Poverty

Economic poverty has been defined as the inability to afford food, clothing, shelter, education, and health services—all of which are used to measure poverty. The differences among poverty incidences among regions, provinces, and municipalities explain the unequal distribution of income and resources among these areas and among its population. Llanto (1996) analyzed the price and income elasticity of Philippine households (i.e., rural and agricultural households). Findings show that households in the lower strata are more affected when there are shocks affecting commodity prices and level of income. The factors that cause food prices to increase have negative effects on poor households. It shares the view that poor households have huge expenditures on food. Any rise in food prices will hurt them more than the nonpoor households. The price and income elasticity of households at the regional level, income class, and geographical location were also analyzed. Results revealed that rural and agricultural households are price inelastic to staples since these are easily accessible and have no close substitutes. If the productivity of the agricultural sector will be developed, the industry will grow and will create more meaningful employment opportunities for the poor that will eventually get them out of poverty. Initiatives to distribute agricultural profits fairly are also called for.

The concept of poverty is not just deprivation of access to assets that are essential to live decently. Schelzig (2005) recognized that poverty is also a dynamic and complex phenomenon describing vulnerability and powerlessness. That is, the definitions and measures of poverty are not stagnant. It evolves accordingly from the traditional measure of income, as the gauge of welfare, towards to deprivation of basic needs (i.e., food) and capabilities (Sen, 1979).

In developing economies, Albert and Molano (2009) discussed that poverty lines represent absolute poverty lines, which are based on a fixed standard of welfare adjusted whenever price changes. In the Philippines, the estimated poverty line represents the required income needed to afford the minimal needs of a household, both food and nonfood. The food aspect is

referred to as the food poverty line (FPL)—which employs one-day menus that are nominally valued at the minimum price, expected to meet required daily dietary needs.

Meanwhile, Pedro, Candelaria, Velasco, and Barba (n.d.) estimated food threshold and poverty incidence using the food baskets across income groups. Results showed that the food basket of the upper 70% of the income decile consists of food and other commodities that are more complex and expensive as compared to the lower 30%.

It is apparent that the studies of Albert and Molano (2009) and Pedro, Candelaria, Velasco, and Barba (n.d.) looked beyond the traditional definition of poverty using income levels of households. In their study, nutritional intake and food basket composition are also appropriate measures to define poverty and quantify welfare.

Antipoverty Programs

Since the 1990s, specific projects for poverty reduction have already been in place. For instance, the Social Reform Agenda (SRA) focused on poverty alleviation and rural development for the disadvantaged economic and social groups. It set the foundation for the Social Reform and Poverty Act of 1997 (Republic Act [RA] 8425), which created the National Anti-Poverty Commission (NAPC), which serves as the coordinating and advisory body of programs concerning social reforms and poverty reduction. It also institutionalized the participation of local government units (LGUs) and nongovernment organizations (NGOs) in incorporating the SRA and at the same time managing microfinance programs and institutions. In 2001, under the supervision of NAPC, the *Kapit-Bisig Laban sa Kahirapan* (KALAHI) program was launched. KALAHI was involved in the implementation of: rural projects, urban projects, social initiative projects, and resettlement in conflict areas.

However, government-sponsored programs to reduce poverty always have accompanying issues—categorized into (1) policy issues, (2) institutional issues, and (3) resource issues. For policy issues, every president is compelled to introduce new antipoverty programs regardless if there are ongoing initiatives set by the previous president. There may be instances that even successful programs were discontinued since the value proposition of the previous is not aligned with the current president. This results to redundancies in plans, frameworks, and targets—waste of resources. Likewise, antipoverty programs suffer from inappropriate targeting that are diverse, inefficient, and highly politicized resulting to inadequate implementation. It also results to inclusion/exclusion of intended beneficiaries and significant leakages to unintended beneficiaries. For institutional issues, it includes

transitional problems (disjoint priorities of leaders), highly politicized programs (biased selection of beneficiaries), and political appointment of agency heads (nepotism and cronyism). For the resource issue, the scarcity of funds compelled the government to establish the Poverty Alleviation Fund (PAF) in 1998. It states that funds for poverty reduction should always be part of the national budget (Schelzig, 2005).

Operational Framework and Methodology

Data Requirements

To quantitatively determine the likelihood why households will remain or move in and out of poverty, the 2000, 2003, 2006, and 2009 Family Income and Expenditure Surveys (FIES) will be used. The FIES provides data on family income and expenditure, which includes consumption levels by item of expenditure and sources of income. It captures levels of living and disparities in income and spending patterns of households belonging to different income groups and geographical locations in the Philippines. It also includes related information such as household size, employment status, demographics, and educational attainment of household head. It is released by the PSA on a triennial basis.

The sufficient sample of nationwide data contained in the FIES allows for the generation of distribution diagrams and measures of living standards in the Philippines for both national and regional levels. These measures aim to provide comparable and quantifiable indicators of social welfare that will facilitate interregional comparisons. However, as argued by Jao, Ng, and Vicente (2000), since welfare is a multifaceted idea, the attempt to capture its definition into one encompassing indicator remains to be the major limitation of this study.

Repeated Cross-Section and Pseudo-Panels

Panel data is the ideal method to measure income mobility, but due to data limitation, we used an approach that is different but will yield results expected from panel data estimation. It will also offer insightful inferences on poverty mobility and its related dynamics. It is important to note that the estimates are bounds of the fraction of mobility (upper and lower) and not actual point estimates. This alternative approach was used by Dang, Lanjouw, Luoto, and McKenzie (2011), which employed repeated cross-sections. This method will allow the creation of pseudo panels to assess bounds of mobility in and out of poverty.

The procedure will only make use of the 2003 and 2006 FIES. We are dropping the 2000 and 2009 FIES because it is conditional that the measure of welfare (income or consumption) will be the same for both periods. The 2003 and 2006 FIES utilized the same interview procedure and have the same set of survey questions (Ericta & Fabian, 2009), which make them viable for this procedure.

Another issue to consider when using surveys is attrition. There is little probability that a specific household can be traced from 2000 to 2003 to 2006 to 2009. As such, this procedure will make use of pseudo panels at the cohort level. Hence, both data sets are restricted to households with heads having an age of 25 to 60. This restriction will rationalize problematic and less indicative nature of households with heads aged younger than 25 and older than 60, for trivial reasons.

In estimating the upper bound (or the unobserved first period consumption), the procedure will begin with ordinary least squares (OLS), shown in Equation 1:

$$y_{i1}^{1} = \beta_{i1}' x_{i1}^{1} + \varepsilon_{i1} \tag{1}$$

where

y_{i1}^{1} is consumption for round 1, and

x_{i1}^{1} is a vector of household characteristics which are observed in round 1.

We then predict the residuals from Equation 1 and take a random draw with replacement from the distribution. Together with the estimated *betas* and the observed values of household characteristics in round 2, Equation 2 shows the estimated first round consumption:

$$\hat{y}_{i1}^{2} = \hat{\beta}_{i1}' x_{i1}^{2} + \hat{\varepsilon}_{i1}^{2} \tag{2}$$

where

$\hat{y}_{i1}^{2}$ is the unobserved first period consumption,

x_{i1}^{2} observed household characteristics from round 2, and

$\hat{\varepsilon}_{i1}^{2}$ randomly drawn betas (with replacement) from (1).

Using the estimated first-round consumption, the degree of mobility to and from poverty will be computed as in Equation 3:

$$Pr(\hat{y}_{i1}^2 < p \big| y_{i2}^2 > p) \tag{3}$$

where p is the poverty line. The study will use the poverty threshold released by the Philippine National Statistical Coordination Board (NSCB) in 2006, which is PHP 75,285.00 (http://www.nscb.gov.ph/pressreleases/2008/PR-200803-SS2-02_pov.asp; see Table 1 for more recent figures).

In estimating the lower bounds of mobility, the same procedure will be employed. However, instead of the residuals derived from Equation 1 that will be imputed in Equation 2, another OLS will be estimated, shown in Equation 4, and this will replace $\hat{\varepsilon}_{i1}^2$ in Equation 2.

$$Pr(\hat{y}_{i1}^2 < p \big| y_{i2}^2 > p) y_{i2}^2 = \beta_{i2}' x_{i2}^2 + \varepsilon_{i2}^2 \tag{4}$$

where

y_{i2}^2 is consumption for round 2, and

x_{i2}^2 is a vector of household characteristics which are observed in round 2.

The residuals in Equation 4 will serve as the prediction error in Equation 2, which will then provide a way to estimate the lower bound. Once a series of y_{i2}^2 is estimated, movements into and out of poverty of interest will be computed, which is the same as the representation in Equation 3.

Discrete Models

Once the bounds of mobility are estimated, it is also imperative to observe the physical characteristics of households and its effect on household mobility to and from poverty. Abufhele and Puentes (2011) employed this approach in examining poverty mobility in Chile.

The methodology will utilize the probit and multinomial probit in assessing the factors of transition through maximum likelihood estimation (MLE). To emphasize the role of education on poverty mobility, we included the following factors in our probit specification: household demographics (age, sex, and marital status of household head) and educational attainment

of the household head. From Equation 5 and Equation 6, the dependent variables in each will take the values of

$$y_{entered\ t1,t2}\begin{cases} 1\ if\ household\ is\ Nonpoor\ in\ t_1\ and\ Poor\ in\ t_2 \\ 0\ if\ household\ is\ Nonpoor\ in\ \ t_1\ and\ Nonpoor\ in\ t_2 \end{cases} \quad (5)$$

$$y_{exit\ t1,t2}\begin{cases} 1\ if\ household\ is\ Poor\ in\ t_1\ and\ Nonpoor\ in\ t_2 \\ 0\ if\ household\ is\ Poor\ in\ t_1\ and\ Poor\ in\ t_2 \end{cases} \quad (6)$$

To quantify the dependent variables, we defined the poor households and the nonpoor households using the poverty threshold of NSCB by creating dummy variables (1 = poor; 0 otherwise). These dependent variables will also be used in the multinomial probit models, but there will be two additional dependent variables that will correspond to households that did not change states in between 2003 and 2006. The regression will utilize both household characteristics observed in 2003 and 2006 in order to trace whether factors affecting transition is the same all throughout. Regression results will suggest to policy makers which aspect of the physical characteristics of households will cause detrimental and/or beneficial effects on poverty mobility.

Results and Discussions

Bounds of Mobility

Due to the difficulty of constructing household panel data for the Philippines, we employed the approach of Dang, Lanjouw, Luoto, and McKenzie (2011)—repeated cross-sections of the household data in estimating the dynamics of poverty by transforming these into a pseudo- panel. Although it cannot show mobility point estimates in the presence of measurement error, it can estimate upper bounds and lower bounds of poverty mobility.

Table 5 shows the computed upper and lower bounds using repeated cross-section analysis. Using the upper bound estimates, assuming no autocorrelation between the 2003 and 2006 error terms, the probability that nonpoor households in 2006 were nonpoor in 2003 is 85.32%, and for those poor in 2006, the probability that these households were nonpoor households in 2003 is 44.34%. However, the width of the lower and upper bounds is 19.21% for the nonpoor households in 2006 and 44.34% for the poor households in 2006. These wide gaps of the upper and lower bound estimates may be very limiting. The most important inference that can be derived from Table 5 is movements between states are less often relative to households staying in the same state from 2003 to 2006.

We are emphasizing that these numbers are estimated using household demographics (age, sex, and marital status of household head) and educational attainment of the household head as the variables explaining logged consumption levels. For further research, adding more exogenous variables would minimize the measurement errors thus narrowing the gap of the bounds (Dang, Lanjouw, Luoto, & McKenzie, 2011). Subsequently, the range of mobility will be reduced to create more significant implications.

Table 5. Bounds of Mobility

State of the World	Lower Bound	Upper Bound
Nonpoor in 2006; nonpoor in 2003	0.6611	0.8532
Nonpoor in 2006; poor in 2003	0.1468	0.3389
Poor in 2006; nonpoor in 2003	—	0.4434
Poor in 2006; poor in 2003	0.5566	1.0000

Probit Estimations

Table 6 summarizes the marginal effects after probit estimations. Notice that the endogenous variable was estimated twice, each considering the household characteristic observed in the 2003 and 2006 FIES. This is due to the fact that both FIES are not panels representing the same set of households. Nonetheless, results will still provide inference on the characteristics of the surveyed households and its relation to poverty mobility.

Nonpoor to Nonpoor

Both survey periods showed the same marginal effects to the probability of remaining out of poverty. Indeed, educational attainment served as a key factor in sustaining household security. Furthermore, civil status (i.e., being married) contributes positively to the likelihood of being nonpoor. With the spouse working, it will provide additional source of income to finance household expenditures. Age also contributes positively to the chances that a household will remain out of poverty. This is due to the fact that most household heads who are considered nonpoor in the first period are less likely to retire and stop working in the second period.

Poor to Poor

Both survey periods show the same results when it comes to its response

in staying poor. Similar with the nonpoor-to-nonpoor results, education decreases the chance of staying poor. This is also the case in being married and having a spouse who is employed. It decreases the chances of being poor since more income from employment will provide sustenance to the household.

Nonpoor to Poor

The results for the 2003 and 2006 FIES differ in terms of signs. The 2003 FIES provided counterintuitive but significant marginal effects. This might be due to the fact that the observed poor households are in 2006 while the nonpoor households are in 2003. This causes the response to different period household characteristics to contrast.

It can also be construed that the actual movement to the new state happened in 2006 and not in 2003 wherein the new state, which is being poor, responded accordingly to a priori expectations. Observing the figures, the results from 2006 are more intuitive—the educational attainment of household head diminishes the probability of being poor.

Poor to Nonpoor

Here, the logic is the same with the nonpoor-to-poor results. However, it has been established that educational attainment still plays a critical role in combating poverty. Thus, poor households who have readily acquired skills and training are more likely to become nonpoor in the future. Additionally, the civil status and employment of the household head's spouse will also increase the chances of moving out of poverty since it can provide more channels of income for the household.

Table 6. Marginal Effects After Probit Estimates

Endogenous Variables	Nonpoor to Poor		Poor to Nonpoor		Poor to Poor		Nonpoor to Nonpoor	
Exogenous Variables	2003	2006	2003	2006	2003	2006	2003	2006
Age	0.002633	-0.00223	-0.0052	0.00	-0.00238	-0.00441	0.005793	0.007583
Male household head	-0.039	0.039814	0.076223	-0.04062	0.024949	0.031403	-0.04726	-0.03131
College graduate	0.253236	-0.20326	-0.27024	0.341975	-0.13097	-0.14528	0.512482	0.416125
College undergraduate	0.23922	-0.18097	-0.23743	0.314101	-0.11223	-0.12712	0.460946	0.378754
High school graduate	0.176801	-0.1717	-0.21051	0.259444	-0.10077	-0.122	0.388629	0.338183

Table 6 continued...

High school undergraduate	0.128949	-0.11958	-0.13881	0.203128	-0.06627	-0.07681	0.297921	0.261113
Grade school graduate	0.090875	-0.08498	-0.09706	0.134611	-0.05116	-0.05481	0.224418	0.196181
Grade school undergraduate	0.029589	-0.04308	-0.03749	0.074923	-0.02501	-0.02769	0.099492	0.102318
Married	0.035853	-0.07994	-0.09059	0.050539	-0.02601	-0.04552	0.045842	0.060968
Spouse is employed	0.033089	-0.03362	-0.06266	0.032239	-0.03309	-0.02902	0.064	0.03287

Conclusions

With the depth of poverty in the Philippines posing a threat towards economic growth and development, one may argue that poverty alleviation may also be addressed by appealing to the capacity of households to improve their economic position. The condition in which a household remains impoverished can be ascribed not only to the ineffectiveness of antipoverty programs but also to the income-earning capacity and spending behavior of households. In this study, instead of evaluating the efficiency of government programs in alleviating poverty, we looked at the household educational and demographic variables explaining why households move in and out of poverty.

In addressing the first research objective, we estimated the probabilistic relationship of the poverty mobility and selected sociodemographic factors. We employed repeated cross-section analysis that will allow us to create pseudo-panels that will compute the upper and lower bounds of mobility to and from poverty. Findings encourage the importance of human capital investment and having an employed spouse to escape and remain out of poverty. In general, those who have acquired skills training are more equipped to sustain their families given a larger income. This enables them to be prepared for economic shocks such as financial crises, natural disasters, social conflicts, and environmental property.

In addressing the second research objective of explaining why households retain or shift socioeconomic status, we have seen from the results that for developing economies, like the Philippines, engulfed by income inequality, inequitable distribution of income, the economy's population needs a total overhaul on its human resource development. As evidenced by the marginal effects after probit, households headed by educated individuals are more equipped to deal with unexpected shocks that disrupt income flow. As such,

securing a stable and meaningful employment presents itself as the primary objective. Moreover, the poor must be made aware that it is never too late to continue education with the availability of technical and vocational courses offered by the Technical Education and Skills Development Authority (TESDA). Instead of providing the most basic skills offered by basic education, TESDA's courses provide workers with a skill set more suited for specific jobs.

It has been apparent that the lack of education negatively affects the spending patterns of households. They have the tendency to inefficiently allocate resources for long-run benefits. With the lack of education, the poor may develop a mentality that collectively points to laziness and overdependence—they do not see the need to take action to solve their own problems because they believe that the state and NGOs will eventually provide aid incessantly.

In addressing the third research objective, we have explored other perspectives why households find it difficult to move out of poverty. This will lead to the creation of policy options. For instance, rapid population growth undermines both macro- and micro-level poverty alleviation efforts. This is due to the misguided notion that more children translate to greater income and to greater chances of escaping poverty. Chances are households tend to discount the initial spending necessary before these expectations are achieved. As such, the failure to provide every member of the household with a minimum level of education and health worsens the household's condition. Additionally, rapid population growth accelerates labor force expansions leading to higher unemployment rates and poverty persistence across generations. This is even exacerbated in areas where basic education is not available to all.

Accordingly, government intervention in human resource development is critical to poverty reduction in the Philippines. The government has adopted two key strategies in accomplishing this goal: (1) the Responsible Parenthood and Reproductive Health Act of 2012 (RA 10354), which promotes limiting family size through family planning, and (2) the K-to-12 program, which expands and strengthens the country's basic education system. In addition to these initiatives, however, the government must also provide opportunities for every Filipino to enroll in technical-vocational courses by improving on the current process and utilization of information and communication technology.

We have been examining why the Philippines is susceptible to poverty. Other than poverty alleviation, there is also a need to stop the vicious cycle so that poverty is not passed across generations. As such, sustained human resource development promotes inclusive growth—a pathway towards

significant poverty reduction. However, this is dependent on the commitment of the government to reduce poverty, regardless of the ruling administration. Temporary solutions (e.g., dole outs, housing), while valued, only address current needs and may not be sustainable. The Philippines should do away with responses to poverty that are short-term reactive and should rather resort to long-term preplanned initiatives. Effective government programs must strike a balance between meeting immediate needs and addressing root causes of poverty.

As a matter of policy, we recommend that in order to reduce poverty, the current system can take the following forms: (1) eliminating redundancies and inefficiencies by seeking the commitment of the present and incoming administrations in continuing the implementation of beneficial poverty reduction programs, (2) designing programs that work on the empirically verified responsiveness of poor households to changes in salaries and wages (strategies that guarantee access to sustainable employment would, thus, relieve the government from the need to offer grants and subsidies that consume significant shares of the national budget), and (3) improving the business environment by lowering corporate taxes for new firms, eliminating red tape, developing infrastructures (e.g., roads and transportation), and promoting a more efficient system and broader scope of financial activities. Favorable business environments attract investments, which create much needed jobs.

Finally, we believe that the most important response to poverty is the attitude an individual takes, the approach undertaken, the organization and institutions working, and, most importantly, the commitment made to fight poverty, as if it were a battle.

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