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Social mobility in the Philippines: A research road map

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Social Mobility in the Philippines: A Research Road Map

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Abstract

In 2016, the National Economic and Development Authority launched the *AmBisyon Natin* 2040, which embodies the long-term aspirations of Filipinos for themselves and for the country. At the heart of these aspirations is the idea of social mobility or the movements of entities from lower socioeconomic status to higher socioeconomic outcomes. To some extent, these aspirations reflect a high degree of optimism given that the country has experienced economic growth since 2011. However, issues on poverty and inequality of opportunities remain and these can potentially derail the attainment of these aspirations.

Given these, it is imperative to understand social mobility and its drivers. To this end, this paper provides the rationale behind the development of a research agenda on social mobility and reviews materials that can help in quantifying distributional changes and in identifying processes or mechanisms that affect mobility. It also identifies available datasets and existing studies in the Philippines that can be used to enrich the state of social mobility research in the country. Doing so will help policymakers figure out a system of programs or interventions needed to facilitate and sustain upward mobility and at the same time, address issues such as in-work poverty and inequality.

Keywords: social mobility, research road map, Philippines

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Social mobility in the Philippines: A research road map

Connie B. Dacuycuy and Lawrence B. Dacuycuy*

1. Introduction

In 2016, the National Economic and Development Authority launched the *AmBisyon Natin* 2040, which embodies the long-term aspirations of Filipinos for themselves and for the country. Its vision includes the transformation of the Philippine society into a predominantly middle-class society and the eradication of poverty and hunger by 2040. In particular,[1]

> Vision of Filipinos for self: *"In 2040, we will all enjoy a stable and comfortable lifestyle, secure in the knowledge that we have enough for our daily needs and unexpected expenses, that we can plan and prepare for our own and our children's futures. Our families live together in a place of our own, yet we have the freedom to go where we desire, protected and enabled by a clean, efficient, and fair government."*
>
> Vision of Filipinos for country*: "The Philippines shall be a country where all citizens are free from hunger and poverty, have equal opportunities, enabled by a fair and just society that is governed with order and unity. A nation where families live together, thriving in vibrant, culturally diverse, and resilient communities."*

While not explicitly stated, the idea of social mobility lies at the heart of *AmBisyon Natin* 2040. Social mobility has various definitions (Pastore and Haller, 1982; Galiani 2010; Crawford, Machin, and Vignoles 2011; Heckman and Mosso, 2014; Torche, 2015), although it is generally understood to connote the movements of entities from lower socioeconomic status/social origins to higher socioeconomic outcomes/social destinations. In the literature, socioeconomic status/outcomes are frequently proxied by occupation, education, and earnings/wages. To some extent, the articulation of the vision above is a reflection of the average citizen's optimism, given that the country has experienced an average GDP growth rate not lower than 6% since 2011.

Despite such rosy outlook, there are several developments or issues that can potentially derail the fulfillment of these aspirations. One, based on the World Economic Forum Inclusive Development Index, the country is 38th among the 70 emerging economies included in the Report. While this is an improvement from its 2017 rank (40th), the country lacks progress on inclusion indicators, such as income and wealth inequality (World Economic Forum, 2018). This means that the country has to do more work so that economic gains can be equally shared.

Inequality is less of a concern when it arises due to disparities in effort and work. It becomes a legitimate concern for intervention when it arises due to the dependence of future outcomes on initial conditions such as family background (oftentimes referred to as intergenerational persistence and is related with the idea of social mobility). This is at the heart of the notion of equality of opportunity, or the idea that success should depend on hard work, that opportunities to get ahead in life should not be affected by the circumstances at birth, and that the labor market should allow for free and open competition among children from all social origins

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[1]Taken from http://2040.neda.gov.ph/wp-content/uploads/2016/04/A-Long-Term-Vision-for-the-Philippines.pdf

(Mitnik and Grusky 2015). Inequality becomes an even bigger concern due to the potential feedback between inequality and intergenerational persistence. On one hand, the intergenerational persistence in socioeconomic status is the main mechanism through which inequality of opportunity persists in a society (Azomahou and Yitbarek 2016). On the other hand, there is a body of evidence that suggests that more inequality in the present is likely to make family background play a stronger role in determining the adult outcomes of today's young people (Corak 2013).

Two, the country still has to address its age-old problem of poverty. From 2006 to 2015, the country's poverty incidence has declined from 26.6% to 21.6%[2], but the latter estimate is still 4.4 percentage points higher than the MDG target. In addition, a growing evidence points to high chronic poverty in the country (Reyes et al. 2011; Bayudan-Dacuycuy and Lim 2013). This means that poverty is experienced by a large portion of the population on a persistent basis and this has implications on the nature and type of interventions necessary to address not only chronic poverty but the latter's effect on intergenerational outcomes as well.

As a stylized fact on poverty in the Philippines, one that does not get its fair share of prominence, is in-work poverty, or the situation where workers are poor even when they are employed. This is reflected in the high poverty incidence rate among the employed population relative to that of the unemployed. In 2006, the poverty incidence of the employed population is 22.9% while that of the unemployed is 16.5%. In 2015, the former was 18% while the latter was 16.4%[3]. In-work poverty is likely to happen because a significant portion of the working population continue to be low-skilled. Such workers also come from poor households and they continue to have low quality jobs characterized by low pay and low work intensity. Because most of their jobs is in the informal sector, such workers also enjoy limited social protection.

For a developing country like the Philippines, the challenges of measuring and characterizing empirical processes that govern intergenerational transmissions of family attributes, mitigating poverty and promoting equality of opportunities, remain relevant. Given the *AmBisyon* 2040, it is important to understand what the drivers of social mobility are since these can provide policy directions to ensure the attainment of an acceptable degree of policy continuity. For instance, studies in developed economies highlight how strong the relationships between intervention programs done in early ages and labor market outcomes during adult years are (Black, Devereux, and Salvanes 2007; Case and Paxson 2008). Equally important is to be able to understand the role of segmented labor markets in social mobility outcomes because addressing poverty will not only allow poor households to transition towards the non-poor state but has the potential of altering the opportunity sets of future generations.

Given this backdrop, this paper provides the rationale for laying down the research agenda on social mobility. Social mobility's natural realm is in the sphere of public policy, the expected concern of which is to figure out a system of programs or interventions needed to facilitate and sustain upward mobility and at the same time, address in-work poverty and inequality issues. Hence, the paper presents a roadmap for undertaking social mobility analyses in the Philippines that will lead to the eventual inventory and assessment of initiatives on education, health, and the labor market, and of policies that address poverty and promote job stability and security. To do this, the paper reviews issues and key drivers of social mobility, with an eye towards extending existing approaches to labor markets and broadening the research base in the Philippines. The paper identifies the following themes to structure the review:

[2] https://psa.gov.ph/poverty-press-releases
[3] https://psa.gov.ph/poverty-press-releases

Theme 1. Social mobility: Theoretical foundations

This theme focuses on the theoretical foundations of social mobility and their potential linkages to other issues such as in-work poverty. While the literature has progressed steadily from the seminal work of Becker and Tomes (1986) to Becker, Kominers, Murphy, and Spenkuch (2015), more theoretical explorations may be needed to integrate in-work poverty, a situation in which an individual who belongs to a poor household may be subject to adverse economic shocks that precipitate prolonged unemployment spells or persistent underemployment. The usual model structure assumes that households may encounter constraints in credit, which result in the suboptimal investment in children. Credit constraints can then be linked to the onset of unemployment spells or persistent underemployment, something that has been undertaken by Drewianka and Mercan (2009).

Theme 2. Social mobility: Definition, indicators, and measurements

This theme highlights the empirical dimension of social mobility research. It starts from the definition of social mobility and proceeds to discuss some of its indicators, which include intergenerational wage elasticity, intragenerational wage mobility, occupational mobility, and educational mobility. As noted in Lee and Solon (2006), measuring mobility requires the efficient use of information that long panel datasets can provide. While this review deals with research that can help in quantifying distributional changes and in identifying processes or mechanisms that affect mobility, it also touches on methodologies that help measure and characterize mobility and at the same time, adapt to Philippine statistical realities.

Theme 3. Social mobility: Policies that matter

This theme reviews some studies that identify broad policy initiatives that may have implications for social mobility. As noted in Becker, Kominers, Murphy, and Spenkuch (2015, henceforth BKMS), it is possible that interventions that seek to ameliorate cross-sectional inequality may induce immobility. Galiani (2010) notes that policies promoting mobility must attempt to break the dependence of achievements on family background. Since social mobility has been linked to human development (see for example, Heckman, Stixrud, and Urzua 2006, Heckman and Mosso 2014, Francesconi and Heckman 2016), it is also important to understand the policy interventions undertaken in other countries, which can be used as potential guides for the stock-taking or inventory of human capital policies necessary for ensuring social mobility in the Philippines.

In contrast to the good state of empirical research on social mobility in other countries such as the United States, Canada, and countries in Latin America and the Scandinavian region, the lack of appropriate data in the Philippines has been acknowledged as one of the impediments for implementing a broad research program on social mobility. Hence, this paper also reviews the empirical requisites essential to mainstream the issue of social mobility in the country. In addition, it also identifies available datasets that researchers can use to conduct social mobility studies. Some potential topics associated with each dataset are also offered.

2. Literature review

2.1 Social mobility: Theoretical foundations

2.1.1 Seminal model: Becker- Tomes framework

The theoretical foundations on intergenerational earnings mobility have been laid down by Becker and Tomes (1979) and Becker and Tomes (1986), both of which continue to provide the framework and empirical map for a considerable number of studies[4]. In its simplest form, the Becker-Tomes model relies on a combination of investment decisions and a model of intergenerational ability transfer to produce a model of intergenerational mobility (Grawe and Mulligan 2002)[5]. Due to the considerable influence of credit constraints on household's ability to invest in human capital, researchers have been keen to identify patterns associated with the nature of relationship between social mobility and credit constraints across household subpopulations (Becker and Tomes 1986; Grawe and Mulligan).

To show fundamental equations, we follow Galiani's (2010) exposition of the Becker- Tomes framework. Consider a family belonging to a continuum of dynasties. In this family, the current generation values its utility and the future income of children. Specified in terms of a generic utility function anchored on risk neutrality of preferences, we have

$$U_t = U_t(c_t, I_{t+1}) \tag{1}$$

where c_t represents parental consumption and I_{t+1} denotes a child's income during the next period. I_{t+1} is a linear function of parental investments in a child (y_{t+1}), endowed luck that is correlated across generations belonging to a dynasty (e_{t+1}), and a stochastic component (μ_{t+1}). Each of the components of I_{t+1} contributes ω_{t+1} to future child's income. The equation is specified as

$$I_{t+1} = \omega_{t+1} y_{t+1} + \omega_{t+1} e_{t+1} + \omega_{t+1} \mu_{t+1} \tag{2}$$

For instance, a child's future income is higher if parents invest optimally in his or her education, expand and sustain family networks within generations, and enhance intergenerational connections through the propagation of family norms, customs, and practices. The high transmissibility of desirable traits contributes toward a higher I_{t+1}.

As a classical problem, parents choose investments and bequests that will maximize utility, U_t. The budget constraint is given by

$$c_t + \frac{\omega_{t+1} y_{t+1}}{1 + r_t} = I_t \tag{3}$$

The average level of endowed luck in a family is

$$e_{t+1} = (1 - h + f)\bar{e} + h e_t + \nu_t \tag{4}$$

[4] Corak (2013) has mentioned that these studies provide the basis for interpreting some of the variables as having causal effects on intergenerational inequality and mobility.
[5] It should be emphasized, however, that this simple model may not reflect persistence in human capital investments in rich and credit constrained households, making them relatively immobile.

As explained in Galiani (2010), the parameter h accounts for the fraction of traits transmitted from past to future generations and f is the growth rate of average endowment in the economy. As h approaches 0, $\lim_{h\to 0} e_{t+1} \approx (1+f)\bar{e} + \nu_t$, implying equal level of endowments across families. On the other hand, a very high h would mean greater disparities in endowed luck across families and the impact of realizations in ν_t would become highly persistent. ν_t is just an uncorrelated random component that determines the evolution of e_{t+1}.

Theoretical enhancements to the Becker and Tomes framework have been offered by Solon (2004) to allow the model to explain temporal and locational variations in intergenerational earnings mobility. Solon's (2004) model also shows that the steady state cross sectional inequality responds positively to the presence of stronger heritability, more productive human capital investment, higher returns to human capital, and less progressive public investment in human capital (Solon 2004).

2.1.2 Extended model: Complementarities between parental human capital and investments in children

A very interesting case that stimulated further discussions focuses on the US experience, which presents a case of low mobility but increasing cross-sectional inequality due to labor market developments. This stylized fact is the basis of the BKMS framework. Relative to the seminal studies by Becker and Tomes, the BKMS study accounts for complementarities between parental human capital and investments in children to provide a better explanation why the US experiences low mobility given persistence in cross-sectional inequality. Under the BKMS framework, a parent's utility function, which is now anchored on risk-averse preferences is specified as follows:

$$U(Z_p) = u(c) + \delta u_c(Z_c) \tag{5}$$

As arguments of the utility function, c, Z_p, and Z_c represent consumption, parental and expected child's resources, respectively. δ is an altruistic parameter. Parental earnings (E) depend on the parental human capital (H_p), the price of human capital (r), and labor market luck (ϵ) represented by a stochastic process independent of human capital.

$$E = f(r, H_p, \epsilon) \tag{6}$$

Meanwhile, a child's level of human capital (H_c) depends on the amount of parental investment (y), government's spending on education (G), the ability of the child (A), and other factors (F).

$$H_c = h(y, G, A, F, H_p) \tag{7}$$

To introduce complementarity, BKMS use the Cobb-Douglas human capital production function, the arguments of which are parents' investments in children and human capital. The level of human capital produce is shifted by the child's ability. The generic function is given by

$$H_c = AF(H_p, y) \tag{8}$$

Indicative of the importance of parental inputs, BKMS embeds complementarities between parents' investments and human capital in the human capital production function of a child, thereby enabling the BKMS model. In contrast to the Becker-Tomes model that specifies parental human capital as a linear determinant of a child's human capital, BKMS incorporates nonlinearities in the production function. This assumption turns out to be instrumental in explaining the US experience, supporting the observation that immobility is experienced at the top and bottom parts of the distribution and mobility is more likely to be achieved in the middle.

In the BKMS framework, parents optimize utility choosing the optimal level of investments in children and the amount of bequest, conditional on whether they face binding credit constraints. The other constraints include the production function and determinants of earnings. Adhering to optimization principles, parents invest in their children's human capital up to the point where marginal returns to investments is equal to the rate of return on capital (BKMS 2015). The optimal level of parental investment positively depends on parents' human capital, the price of human capital, the share of parental investments in the human capital of the child, and the elasticity between human capital and earnings.

The modeling implications of the BKMS framework are useful for understanding the links among family environments and circumstances, child development, and mobility. By introducing complementarity, richer households tend to invest more in their children's human capital even under perfect capital markets. With a high degree of transmissibility, this translates to high persistence, hence low mobility. Poorer households tend to invest suboptimally in their children's human capital, leading to a high degree of persistence. Another key implication of the convex relationship between H_c and H_p is that the degree of intergenerational mobility of children with low educated parents is higher than those with higher levels of human capital (BKMS 2015). This has also been pointed out by Azam and Bhatt (2012) and Wagner (2017) from the educational mobility literature.

As noted by Galiani (2010), an increase in the propensity to invest in children would bring down inequality but would worsen mobility. The persistence characterizing the human capital investments of rich households and credit constrained households results in the enhanced ability of earnings to predict the economic status of children. As BKMS has confirmed, low mobility may be sustained, as no regression to the mean is observed even when credit constraints are relaxed. The BKMS model can also be used to explain why labor market developments, such as increases in returns to education, may not induce improvements in intergenerational mobility.

2.2 Social mobility: Definition, indicators, and measurements

2.2.1 Definition

Social mobility refers to the movements of entities from lower to higher socioeconomic status indicators (Beller and Hout 2006, Galiani 2010). It is viewed in the same context as intergenerational mobility or intergenerational persistence, which is the degree of fluidity between the socioeconomic status of parents and the socioeconomic outcomes of their children as adults (Blanden, Gregg, and Macmillan, 2007). A high correlation between these two indicates low intergenerational mobility or high intergenerational persistence. This is a concern for intervention since this may mean that observed inequalities arises from inequalities of opportunity. In the literature, socioeconomic status (in the parlance of Economics) or social origins (in the parlance of Sociology) is frequently proxied by occupation, education, and

income/wages. Of these proxies, income and wages are used mostly by economists while occupation outcomes are used by sociologists.

Social mobility has two dimensions, namely: absolute and relative. It is considered absolute when the current generation occupies a higher socioeconomic status relative to the previous generation. In the field of economics, empirical investigations can be operationalized using a transition matrix that shows upward or downward movement of children's outcomes relative to parents'. In the field of Sociology, such investigations can be operationalized using a mobility table, which contains the proportion of individuals (destination) whose status changed/remained the same relative to their parents (origins) (Torche 2015).

Social mobility is deemed relative when it refers to the association between the socioeconomic status of parents and children. Relative rates of mobility indicate the level of social fluidity or social openness in a society (Torche 2015), an idea that is consistent with the equality of opportunity. This is also related to the idea of meritocratic social mobility, which implies that chances in life are primarily dictated by the strength of abilities, commitment, and perseverance (Esping-Andersen and Cimentada 2018).

Empirically, relative mobility can be operationalized through regressions of children's parental socioeconomic status against that of the parents. High relative social mobility implies weaker dependence of individuals on their origins. Analysis of this dimension of social mobility underscores the importance of policies that break the dependence of individual's socioeconomic success on initial conditions (Galiani 2010).

2.2.2 Indicators of social mobility and measurements

2.2.2.1 Intragenerational wage mobility and wage distributions

Intragenerational mobility studies analyze the movements of individuals within the wage distribution. In such studies, panel datasets are used because these track changes in individual's wages over time. To do this, summary measures associated with inequality at various parts of the earnings distribution and mobility are computed. In this context, greater mobility leads to improvements in equality. This strand is reminiscent of the development and wide utilization of inequality measures, such as the Gini coefficient, Theil inequality index, and mean log deviation, that can be decomposed into subpopulation – based measures. A key advantage of these summary measures is that they are easy to compute and interpret, and can be used to track changes in mobility and inequality over time.

Most research on intragenerational mobility is focused on distributional properties to understand the evolution of wage inequality over time. For example, Buchinsky and Hunt (1996) develop a decomposable measure using the National Longitudinal Survey of the Youth and examined wage mobility dynamics in the US to explain wage inequality at different time horizons. Buchinsky and Hunt (1996) show that one plausible reason why inequality exploded in the 1980s is due to falling mobility.

Using an internationally comparable dataset on workers, Bachmann, Bechara, and Schaffner (2012) decompose inequality and mobility measures for countries belonging to the EU into within and between group components. Results point to the narrowing down of wage differences due to the declining influence of unobserved components, which were plausibly influenced by more efficient monitoring of worker productivity levels and better business cycle

management. In the case of Turkey, Tansel, Dalgic, and Guven (2014) find that that the observed poor mobility of workers especially from the lower part of the wage distribution may be caused by the weak institutionalization of the labor market.

2.1.2.2 Intergenerational income elasticity

Intergenerational income elasticity measures the relationship between the incomes of parents and their children. The interest in this measure has been partly motivated by the "Great Gatsby Curve" (Krueger 2012), or the empirical regularity that higher inequality is associated with lower mobility. Indeed, intergenerational earnings mobility is low in countries with high inequality such as Italy, the UK, and the US and much higher in the Nordic countries, where incomes are distributed evenly (Corak 2103). In addition, sons have experienced lower mobility in the 1990s for countries with high levels of inequality in the 1970s (Andrews and Leigh 2009).

The empirical framework to measure intergenerational income elasticity uses a simple regression model. In the literature (see for example, Zimmerman, 1992; Bjorklund and Jantti 1997; Bratberg, Nilsen, and Vaage 2003; Ng, Xhen, and Ho 2009; Azevedo and Bouillon 2010), a typical representation to construct the measure is given by the following:

$$y_{i,h}^{c} - \bar{y}^{c} = \beta\left(y_{j,h}^{p} - \bar{y}^{p}\right) + \epsilon_{i,h}^{c} \tag{10}$$

where y and $\bar{y}$ are current and mean income, respectively. Index h refers to the household, to which both child, c, and parent, p, belong. The parameter β represents a population measure of how persistent the effects of a parent's permanent income are on the earnings of the child. Using data on child-parent pairs, equation (10) shows the variation of the deviation of a child's income from his mean earnings relative to that of the parent.

While panel datasets are ideally needed to measure the intergenerational elasticity, recent literature has shown that cross-section datasets can be used to infer the degree of wage mobility. Following Ng, Xhen, and Ho (2009) and Azevedo and Bouillon (2010), the above equation can be rewritten in the following standard form:

$$y_{i}^{c} = \gamma_0 + \beta y_{i}^{p} + \epsilon_{i}^{c} \tag{11}$$

where $\gamma_0 = \bar{y}^{c} - \beta\bar{y}^{p}$ represents the intercept. The above model assumes that y_i^c and y_i^p should be observed and the mean of ϵ_i^c, conditional on the parent's permanent income is zero. Both y_i^c and y_i^p are measured in logarithms so the estimate for β is interpreted as an elasticity measure. If β is high, then wage mobility is slow, or wage effects are more persistent, indicating that the resulting wage outcome of the son or daughter does not improve upon the distribution of the parent. This is related to the question of how influential parental education is with respect to wage outcomes of individuals.

In the context of cross-section data, Ng, Xhen, and Ho (2009) have used a sample selection criteria based on the Singapore National Youth Survey (SNYS), a cross-section dataset, and have replicated these criteria using the Panel Study on Income Dynamics (PSID) dataset, a longitudinal panel dataset. The PSID has been used by Lee and Solon, who introduced a methodology to efficiently use panel data in estimating intergenerational earnings mobility.

Ng, Xhen, and Ho (2009) find that the intergenerational earnings mobility estimates using both datasets are comparable.

2.2.2.3 Occupational mobility

While a majority of economists favor the use of earnings and wages as proxies to analyze social mobility, sociologists favor the use of occupational outcomes (Torche 2015). As an indicator of social mobility, occupational outcomes may be more informative particularly in identifying occupations that increase the chances of higher mobility. In the literature, the use of occupational status data has several advantages. It can easily allow the estimation of intergenerational occupation correlation, which largely reflects the existing methodology used in standard analyses of earnings mobility. Unlike earnings data, occupation data are readily available and are not subject to recall bias. In addition, occupation of parents can be reported retrospectively by adult children, circumventing the need for long-term panels (Torche 2015).

Like the preceding methodologies, accounting for relative occupational mobility proceeds by specifying the relationship between the occupation of parents and sons/daughters. In contrast to the regression framework used mostly in the development of mobility measures, the estimation framework for occupational mobility is now probabilistic and its nature depends on how occupation is defined. For example, Pastore and Haller (1982) rank occupational categories using a methodology that accounts for education and earnings while Ganzeboom, De Graaf, and Treiman (1992) create indices measuring occupational prestige. If occupation is ordered based on such information, then ordered probit is used. Otherwise, a multinomial model will suffice.

Let the latent variable o_i^* be generated by an underlying latent process that may be associated with the utility gained from an occupation. Such a utility may be determined partly by the occupation's prestige. This process, $o_i^* = x'\beta + \epsilon$, is an underlying linear stochastic process, whose unobserved value crosses several thresholds within the distribution of occupational prestige. Following Greene (2003), all the possible observed occupational outcomes $o_i = j$ can be mapped onto o_i^* using the following definition:

$$Pr[o_i = j\ ] = Pr\left(\lambda_{j-1}^* \leq o_i^* \leq \lambda_j^*\right), j = 0,1,2, \dots, J \tag{12}$$

where the $\lambda_j^* s,\ j = 0,1,2, \dots, J$ represent the cut-off points. To illustrate, suppose we have ordered three occupations based on prestige. Let the three occupations be elementary occupations ($o_i = 0$), supervisors ($o_i = 1$), and executives ($o_i = 2$), with 2 being the highest. The respective probabilities are going to be defined by the following equations:

$$Pr[o_i = 0\ ] = Pr(o_i^* \leq \lambda_0^*) \tag{13}$$

$$Pr[o_i = 1\ ] = Pr(\lambda_0^* \leq o_i^* \leq \lambda_1^*), \tag{14}$$

$$Pr[o_i = 2\ ] = Pr(\lambda_1^* < o_i^*), \tag{15}$$

What do the evidence say about the degree of accessibility or relative openness of occupations? Using the British Labor Force Survey (LFS) data and relying on a finer disaggregation that can match social origins, examine the relative openness of elite occupations, and the earnings of

upwardly mobile, Laurison and Friedman (2015) show that traditional professions are easily accessed by children of professionals, higher managers, and those with high technical status. In addition, children whose parents have non-elite occupation background tend to experience relatively slower wage growth. Here, the message is clear. Even if a person has successfully entered the labor market, discrimination in the workplace and sectoral rigidities can still hamper the worker's upward mobility in the career ladder.

2.2.2.4 Educational mobility

Another aspect of social mobility is intergenerational educational mobility, or the educational outcomes of children relative to what their parents have achieved. Educational mobility has been substantially analyzed likely because education precedes and determines other social mobility outcomes like incomes, wages, and occupation. Similar to occupation data, the education data of parents and children are less prone to recall errors and parent-child pairs are easily constructed from most cross-section datasets. Like the intergenerational wage/earnings mobility, educational mobility is measured via regression methods. Following Dacuycuy (2017), the equation of interest is given by the following:

$$s_{i,h}^{c} = f\left(s_{i,h}^{p};\ \beta\right) + \epsilon_{i,h}^{c} \tag{16}$$

where $s_{i,h}^{c}$ is the schooling achievement of the child; $f\left(s_{i,h}^{p};\ \beta\right)$ is a known linear function associated with parental educational achievements, the index h refers to the household, which both child i and parent j belong to, and $\epsilon_{i,h}^{c}$ is the disturbance term pertaining unobserved attributes of the child. The parameter β, pertains to the effects of parental education and is the parameter of interest. Higher β implies the presence of persistence, which means that children's educational achievements are not quite far from their parents. In the absence of effective interventions, inferior educational profiles of parents may likely result in inferior educational profiles of children, thereby prolonging the cycle of poverty and worsening inequality.

Equation (16) can be expanded by considering other variables that can affect educational attainment. In particular,

$$s_{i,h}^{c} = f\left(s_{i,h}^{p};\ \beta\right) + x_{i,h}^{p}{}'\delta_i + x_{i,h}^{c}{}'\eta_i + \epsilon_{i,h}^{c} \tag{17}$$

where $x_{i,h}^{p}$ and $x_{i,h}^{c}$ are vectors of father and child's characteristics. In the intergenerational earnings/wage mobility, the effects of paternal education on sons' educational attainment are always investigated. This is due to the fact the women's labor force participation is affected by child birth and child care resulting in several types of bias including sample selection. This is not a significant issue when analyzing educational mobility, however.

Recently, several studies have focused on the measurement of intergenerational transmission of parental education in developing economies. Using a unique dataset, Azam and Bhatt (2012) have estimated the intergenerational education elasticity in India and found that over the years and through reforms, India experienced higher educational mobility. One prominent feature of this study is its ability to address statistical bias brought about by sample selection. Using Sub-Saharan data, Azomahou and Yitbarek (2016) find that African countries have registered considerable gains in terms of intergenerational educational mobility in the past five decades. The study also confirms gender differences in educational persistence across generations, with

daughters' educational outcomes being more correlated with their parents' educational attainments.

Others studies note that the transmission of educational mobility depends on social networks (Calvo-Armengol and Jackson 2004) This theory is interesting because it shows that the higher the use of social networks, the higher will be the theoretical correlation between human capital investments and income.

2.3 Social mobility: Policies that matter

BKMS show that the degree of complementarity between parental inputs/investments and government programs would largely dictate the changes in mobility. Assuming that the household is poor and credit constrained, then the level of parental investments would be lower, thereby affecting the ability of the child to increase human capital production. Without interventions, inequality persists. To the extent that inequality reinforces the influence of family background or social origins, equality of opportunity will never be realized. Therefore, it is important to formulate public policies that break the dependence of achievements of younger generations on family background/social origins (Galiani 2010).

2.3.1 Early interventions in health and education

Intervention at an early age can compensate for the low level of parental human capital (Blanden, Gregg, and Macmillan 2007) and create opportunities even before individuals enter the working age (Narayan et al. 2018). As far as the timing of intervention is concerned, a popular advocacy, one that has significant implications on social mobility, involves addressing inequalities at the first sign of life in the womb since this can potentially reduce disadvantages originating from family background/social origins.

Interventions targeted at improving expectant mothers' health and nutrition are frequently advocated (Currie 2011; Narayan et al. 2018) due to the notion that early life interventions are likely to be more productive than interventions administered later in life (Crawford, Machin, and Vignoles 2011). This advocacy arises from a large body of literature that show initial conditions at birth to be major determinants of adults' life outcomes (Almond 2006; Black, Devereux, and Salvanes 2007; Deschenes, Greenstone and Guryan 2009; Maccini and Yang 2009; Thai and Falaris 2014). Evidence points to the idea that inequality starts in utero given that mothers from different socioeconomic backgrounds have different capabilities in providing for fetal development. Narayan et al (2018) have identified four channels through which inequalities operate. These are poor health behaviors during the prenatal period, greater exposure to harmful environmental factors, lower access to medical care including family planning services, and poorer maternal health including nutrition.

Extension of family planning services in poor communities and the provision of nutritional supplements, like iodine and folic acid, to pregnant women coming from poor households are prenatal programs that can potentially reduce disadvantages arising from family background/social origins. Newborn screening that aids early detection of disorders and the provision of nutritional supplements to children aged below 3 years old from poor households are postnatal program initiatives that can be considered.

Another important area for intervention is education. Breaking dependence implies wielding educational policy to further the achievements of children from poor households well before

they participate in the labor market. Education plays a key role in sectoral selection, and in studies that relate a child's educational achievement to parental education, the latter is an influential covariate. Government programs promoting early childhood care and development may provide rearing and developmental techniques for mothers, thereby strengthening early childhood intervention programs. Pre-school programs and the provision of child care infrastructures in poor communities and ensuring that child care providers have the appropriate skills can also help in compensating for disadvantages arising from family background/social origins.

2.3.2 Education and skills in later-life

While evidence point to the importance of early intervention, some program initiatives or interventions in later-life can also be effective. One-time early intervention without follow-up programs may not achieve intended results and this is especially true in the development of both cognitive and non-cognitive skills. Apprenticeships and training programs for the youth are potential avenues for skills development and upgrades. While these have obvious positive effects, these can have the unintended consequence of further widening the income gap when apprenticeships do more to help those in the middle than those in the bottom parts of the income distribution (Crawford, Machin, and Vignoles 2011). A similar issue is also encountered when the benefits of trainings provided by employers are assessed.

As noted in the literature, education policy may not always lead to better mobility outcomes, especially when its interaction with public policy yields unintended results (Corak 2013). For instance, Machin (2004) concluded that the educational system in the UK may be responsible for preventing increased mobility since children from richer households benefit from educational reforms more than those who belong in poorer households. On the other hand, there are progressive public polices, such as those in Nordic countries, that help low income parents send their children to college (Beller and Hout 2006).

2.3.3 Labor market

Even with robust human capital, returns to education are not guaranteed since it depends on the dynamics of interaction between demand and supply of skills, labor market discrimination and segmentation. A good example is provided by Laurison and Friedman (2015), who show that achieving high educational attainment is not a sufficient condition for achieving high earnings mobility, especially when discrimination is present in elite occupations.

In addition, public financing is an important component of policy interventions aimed at improving educational outcomes (Crawford, Machin, and Vignoles 2011; Narayan et al. 2018). With limited public spending, poorer households will have limited educational opportunities and may have difficulty attending college. Thus, with increasing returns to education, it is expected that earnings inequality will rise, and the limited educational opportunities will result in lower mobility.

Institutional factors such as minimum wage legislation, initiatives that improve the transmission of skills at an early age, educational policies, and economic growth should also be considered. Other initiatives may dwell on social protections accorded to informal sector workers, regulations that facilitate transitions towards formal sector, and structure of incentives and rewards for formal sector firms. Several studies by Almeida and Carneiro (2006, 2011) have pointed out how the enforcement of labor regulations could affect both employment

outcomes in the informal sector and worker productivity. It appears that regulations that introduce less flexible labor contracting arrangements may hurt firm level productivity.

3. Stock-taking in the Philippines: Data sources and existing and potential social mobility studies

3.1 Available data and potential mobility studies

Due to the limited data available in the Philippines, there are very few studies on social mobility. This is true specifically for intergenerational wage/earning mobility, which requires panel data on wages/earnings. Despite this, there are nationally representative survey data collected by the Philippine Statistics authority (PSA) that can be used in social mobility research. These include the Labor Force Survey (LFS) and the Census of Population and Housing (CPH).

3.1.1 LFS: Wage distribution of cohorts

The LFS is a quarterly survey undertaken by the PSA to gather relevant information on labor market activities of individuals during the reference quarter. It is a representative multi-stage survey that uses the sampling frame of the Integrated Survey of Households. Variables critical for mobility studies are available in the LFS. These variables pertain to demographic characteristics, basic pay, total hours of work, occupation, industry affiliation, class of worker, and nature of employment. The class of worker provides data on whether the work is a part of the formal or informal workforce and the nature of employment provides information on the tenure of employment.

Given LFS datasets, it is possible to advance the intragenerational mobility research agenda by carefully calibrating sample selection rules as in Ng, Xhen, and Ho (2009). In addition, it can be used to analyze the wage distribution of cohorts.

3.1.2 Merged LFS-FIES: Mobility and in-work poverty

The January rounds of LFS in 2007, 2013, and 2016 can be merged with the Family Income and Expenditure Survey (FIES) collected in 2006, 2012, and 2015. The FIES contains information on sources of income, expenditures, and receipts, as well as disbursements. It is useful for determining poverty-related statistics such as incidence, depth, and severity. These datasets can potentially be used to analyze intergenerational wage mobility and in-work poverty.

The literature on in-work poverty has flourished recently due to the adverse effects emanating from the prolonged global recession that hit the US and the European Union (EU) labor markets. For instance, Horemans, Marx, and Nolan (2016) have noted that the unemployment and poverty incidence among the employed population; and the number of part-time workers have increased as well. McKnight, Stewart, Himmelweit, and Palillo (2016) have identified several factors that are associated with the increasing in-work poverty incidence within the EU. They note of the following results:

1. The higher the work intensity[6], the lower the poverty incidence observed among households.

[6] defined as the ratio between the number of months that household members of working age worked during the year and the total number of months that could theoretically have been worked (McKnight, Stewart, Himmelweit, and Palillo (2016).

2. Job stability plays a positive role in reducing in-work poverty.
3. Poverty risk increases for part-time workers and the relative proportion of part-time workers is higher in poor households than in their non-poor counterparts.
4. Self-employment contributes to household poverty. Higher poverty risk is experienced when there are more self-employed workers in the households.
5. Lower levels of education increase poverty risk. Jobs may increase but in-work poverty may not change simply because the quality of new jobs created are is low. This is consistent with the findings of the World Bank (2016).

In the Philippines, the high degree of persistence of underemployment and stagnant real wages continue to worry policy – makers. In addition, a high degree of informality characterizes the labor market, which, according to the World Bank (2016), may be associated with high incidence of in-work poverty, low job quality, and limited social protection. Furthermore, poor workers tend to be relegated to bad jobs and face limited opportunities or prospects for wage mobility because of slow wage growth, lack of enforceable protections, and inferior education profiles.

3.1.3 CPH: Occupational and educational mobility

The CPH survey is conducted every five years to collect household data used for estimating the country's population and housing. It gathers information on the characteristics of household members such as age, sex, marital status, highest grade completed, religious affiliation, ethnicity, and disability. It also collects information on household attributes such as construction materials, floor area, and year the house was built. In the CPH Form 3 (20% sampling), data on labor market information such as occupation and class of workers are also included. Given these data, the CPH can be used to analyze occupational and educational mobility within the context of gender and ethnic issues.

Analysis of mobility in the context of gender is important in the Philippines. Women are more educated and have higher functional literacy than men. Yet, they have low labor force participation and are mostly employed in the vulnerable sector. Understanding how this disparity translates into children's outcomes is important since intergenerational links among parents' human capital, offspring's educational outcomes, and labor market performance do matter.

Analysis of mobility in the context of ethnicity is equally important. Due to the importance of racial earnings gaps in the US and elsewhere, several authors (Drewianka and Mercan 2009; Louw, van der Berg, and Yu 2009; Azevedo and Bouillon 2010; Wagner, 2017) have incorporated race in their mobility regressions. While there are studies that find differences in labor market outcomes based on race (Drewianka and Mercan 2009), others have documented educational mobility gains but noted the need for progressive educational policies (Louw, van der Berg, and Yu 2009). In the Philippine context, a general strategy can be crafted to integrate ethnicity in empirical methodologies for measuring wage persistence and occupational/educational mobility.

3.2 Existing studies on social mobility

There are several studies that examine income mobility in the Philippines, most of which use datasets that are collected in specific rice-growing or rural communities. Estudillo et al (2008) analyze the long-term changes in the structures of household income and poverty in

northern/central/southern Luzon and Panay Island from 1985-2004 and find a shift of household income structure away from farm to nonfarm with a corresponding decline in the incidence of poverty. Takahashi et al (2013) analyze the degree of intergenerational income mobility in the rural Central Luzon, Takahashi et al (2013) and find very low intergenerational income elasticity. While this is an indication of income mobility, the magnitude of mobility follows a U-shape across the income percentile, a result consistent with multiple equilibria or poverty trap. Providing a more detailed take, Bevis and Barrett (2015) decompose intergenerational income elasticity into five distinct pathways: intergenerational transmissions of health, education, land, and spouse education capital using a panel dataset collected in Bukidnon by the IFPRI. The study finds that intergenerational human capital transmissions from mothers are stronger than those from fathers. Recently, there are studies that use nationally representative datasets such as the FIES to analyze income mobility (Martinez 2014, 2015) and the LFS to analyze intergenerational wage elasticity (Dacuycuy 2017).

Research on educational mobility has gained some traction using special datasets as well. Lanzona (1998) uses the Bicol River Basin Dataset to estimate the intergenerational education elasticity and finds that maternal education affects the educational achievements of children. Fuwa (1999) uses datasets collected in the central part of Pangasinan in 1962, 1966, 1971, 1976, 1981, and 1994 and finds that schooling has positive effects on upward mobility in both agriculture and non-agricultural sectors. Using the 2010 CPH, Dacuycuy and Dacuycuy (2018) analyze the effects of maternal and paternal schooling achievements on sons' and daughters' human capital outcomes and find that maternal education is important in children's schooling progression outcomes.

On occupational mobility, Bacol (1971) investigates trends using the 1968 National Demographic Survey (NDS) and develops an occupational-ranking scheme based on education, income, and prestige. The paper finds that social origins diminishes the importance of education as a vehicle for son's occupational mobility. de Guzman (1980) investigates intragenerational and intergenerational occupational mobility using the 1973 NDS by developing a classification scheme that ranks eight occupational groups. He finds that social origins are barriers to reach the top occupational strata. In the context of marriage of fertility and using 1968 NDS, Deming (1975) finds that delayed childbearing facilitates occupation mobility in the total population. Given that these studies have been done decades ago, there is a need to conduct studies that use more recent datasets and methodologies that reflect current developments in the empirical literature.

4. Concluding remarks

Addressing poverty has long been the cornerstone of development policy in the Philippines although there is less emphasis on social mobility, a key concept broad enough to encompass poverty and inequality issues. For a developing country like the Philippines, the challenge of measuring and characterizing empirical processes that govern intergenerational transmission of family attributes remains a daunting task. Despite this, there are several social mobility studies that can be done using datasets collected by the PSA. These include studies that analyze outcomes such as income/wage, occupation, and education in conjunction with issues concerning gender, ethnicity, and in-work poverty.

This research roadmap is crafted with the hope of laying down the foundations for invigorating social mobility research in the country. This is also crafted to help pave the way for an eventual inventory and assessment of initiatives on education, health, and labor market that promote

equality of opportunity, as well as policies that address poverty, promote job stability and improve job quality in the Philippines.

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