

# Then and now: analyzing Filipino youth education and work decisions following the K-12 basic education reform

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This research aims to analyze the trends in youth education and work outcomes before and after the implementation of the kindergarten to grade 12 (K-12) Basic Education Reform, focusing on three broad outcomes: (1) in education, (2) in employment, or (3) not in employment, education or training (NEET). It determines certain characteristics associated with each of these outcomes by employing multinomial logistic regression analysis. The study finds that although the overall likelihood of being in education has increased after the reform, certain groups, particularly disadvantaged ones, still have higher probabilities of being in employment or NEET rather than continuing their education. Furthermore, after the reform, young men from disadvantaged groups have a higher probability of being NEET. Albeit minimal, this merits investigation and monitoring in the future, as it may worsen inequalities.

**JEL classification:** I21, I24, J13, J21

**Keywords:** youth labor market, youth school-to-work transition, education reform, youth not in education, employment, or training

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## 1. Background and introduction

The kindergarten to grade 12 (K-12) Basic Education Reform in the Philippines was passed into law in 2013, effectively extending compulsory education and updating the curriculum. The two main objectives of the law are to ensure that students graduating from senior high school will be employable and to make them more prepared for higher education studies. In other words, the reform promises better opportunities for K-12 graduates, thereby making education a worthwhile investment. Were the promises of the reform enough to incentivize the youth to choose education instead of dropping out? Furthermore, if they drop out from school, are they employed, or do they become youth who are not in employment, education, or training (NEET)?

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The study of NEETs is gaining traction in the literature because of the economic and societal implications of this phenomenon (Lewis et al. [1998]; Ling and O'Brien [2013]; Maguire [2015]; Naafs [2013]). There are costs to being NEET, as evidence shows. Youths in NEETs are penalized in the future for lacking education and employment experience (Gregg and Tominey [2005]; Krahn and Chow [2016]). They are also likely to engage in substance abuse and have poorer health conditions (Bania et al. [2019]; Furlong [2006]; Gutiérrez-García et al. [2018]; Ling and O'Brien [2013]; Maguire [2015]). These conditions lead to stigma that can result in their disassociation with society [Bynner and Parsons 2002]. In other words, being NEET sets up the conditions for further inequalities in income, health, and other issues that allow poverty and inequity to prevail in society.

Unfortunately, there is not enough research on NEETs in the Philippines, including the magnitude of their presence nationwide and their socioeconomic profiles. This is despite the recognition of *istambay*, alluding to a Filipino youth who does nothing and is associated with negative concepts, such as idleness and laziness [Batan 2012].

This study has the objectives of (1) examining Filipino youth outcomes in the recent decade in light of the K-12 Basic Education Reform, and (2) probing the overlooked outcome of being NEET. Specifically, this research seeks to know if there is an increase in the propensity of the Filipino youths to choose schooling, instead of employment or becoming NEET. It is also interested in determining the socioeconomic and demographic characteristics associated with each outcome.

In line with the objectives outlined above, the following questions guide this research:

1. What are the trends in Filipino youth education-work decisions—being in employment, in education, or NEET—in the years 2010 to 2019?
2. How are socioeconomic and demographics characteristics associated with the different youth decisions? Are there pervading inequalities?
3. Was there a structural change<sup>1</sup> in the education-work decision trends following the reform? Was the change similar across socio-economic groups or are there differences?

## 2. Theory and literature review

It is important to investigate the underlying factors that may influence youth decisions and outcomes. These factors are best identified and analyzed by studying the different theories and frameworks that influence decisions relating to education and work, especially for the youth. Furthermore, to contextualize the analysis, studies that relate sociocultural and historical perspectives with youth decisions and outcomes are surveyed, in the Philippines or in countries that share similar characteristics.

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<sup>1</sup> By structural change, this means a discernible change in the trend (or patterns) in terms of work and education outcomes starting 2016, which marks the start of the K-12 Basic Education Reform.

### *2.1. Human capital theory*

One dominant framework linking education and work outcomes is the human capital theory. In this framework, increased skills and competencies, acquired through schooling and work experience, are remunerated with higher wages or income (Becker [1962]; Mincer [1958]). However, indirect and direct costs and benefits are taken into account, especially opportunity costs or the benefits that will be foregone should the individual spend time in school rather than on other activities such as work. Those who go to school now forego the opportunity to earn money at present but have a higher trajectory of earnings in the future as compared to those who do not (Harmon et al. [2003]; Psacharopoulos and Patrinos [2004]). Thus, the rational decision for an individual is to spend on education, making schooling an investment.

### *2.2. Transition to adulthood and the life course theory*

Young people in their ‘transition to adulthood’ make life choices that include education and work, as well as marriage and family life (Modell et al. [1976]; Neugarten and Danan [1973]). The transition to adulthood is a crucial part of the individual’s life stages. This is being studied under the Life Course theory, which is an interdisciplinary field of study that brings in approaches and perspectives from the disciplines of sociology, psychology, biology, economics, anthropology, and history, as well as fields of study such as demography, epidemiology, criminology, and health and policy sciences (Bernardi et al. [2019]; Elder et al. [2003]). The Life Course theory sees the behavior of individuals as dynamic. They act and decide given a specific juncture in their lives, and these choices add up leading to certain outcomes in the future [Elder 1994]. As such, it is important to note the turning points of the youths in their transition to adulthood, as their choices will have repercussions on their next life stages [Elder 1998].

Scholars argue that in these turning points young people construct their life choices based on how they see themselves in the future or their aspirations (Hart [2016]; Hart and Sriprakash [2017]; Naafs [2013]). However, youth aspirations alone do not determine the outcomes—the role of families, in particular the parents, are crucial. The outcomes thus may also be reflective of the aspirations of the parents themselves. Therefore, there is the question of how much control or agency the youth has in making decisions (Elder [1994]; Evans [2007]).

Emerging research in the Global South has revealed that while modern neoliberal and western values of individual success are being integrated into these societies—due to globalization and industrialization—young people are bound by local customs, traditions, and cultural ideologies such as gender roles, filial obligations, and strong community ties (Alipio [2013]; Skelton [2012]; Yeung and Alipio [2013]). Furthermore, also among countries in the Global South, there are variations due to the diversity of values, social and political institutions, and economic development.

Specifically, in the Philippines, many social norms govern family and community relations, which in turn might affect young people's decisions concerning education, work, and plans. One of them is '*pakikipagkapwa*' (reliance on others) and another is its cousin, '*utang na loob*' (debt of gratitude) (Kaut [1961]; Marcelino [1990]; Reyes [2015]; Tuason [2008]). The latter is a system of contractual obligations that cause individuals to be perpetually tied to repaying the gratitude from family members or community members [Kaut 1961]. This includes the filial obligation of children to their parents, and the expectation to provide support to parents and siblings once they have the capacity to do so. Some studies in the Philippines have documented how young people link their aspirations and individual decision-making with the perceived obligation to study for employment, and eventually supporting the schooling of other siblings (Aldaba et al. [2004]; Camacho [1999]; Torres [1982]). Thus, youth decision-making largely anchors on family dynamics in the Filipino society, either through acknowledgment of parental authority or through their values of putting family first. This debt of gratitude also extends to members of the community that have provided assistance in times of need—in which case the receiver of assistance should be prepared to return the favor. However, Kaut [1961] claims that this system victimizes the poor, and aggravates power imbalances in the society by trapping impoverished people in a cycle of debt. In some ways, it could even affect aspirations. A qualitative study in the Philippines on people who have been born into poverty has found that those who remained poor expressed that "they are better off without ambitions" for fear of greater obligations [Tuason 2008:165]. As found in this study, these people believed that ambitions are for the rich or those with wealthy relatives and that being born into poverty is a God-given fate, consistent with the religious teachings of the Catholic faith—the predominant religion in the Philippines. This suggests that social norms and institutions could affect aspirations and in turn decisions of the youth. Moreover, it raises the question of whether the state of the youth (i.e., being in education, working, or neither) is less of an individual decision and more of an uncontrollable outcome brought by these various forces.

Nonetheless, most people in developing countries like the Philippines generally see education as a means to securing employment, which is part of the societal expectations of young people in their transition to adulthood (Naafs and Skelton [2018]; Yeung and Alipio [2013]). Even in rural areas, where there is a lack of opportunities and more traditional views on gender roles, the value of education is factored in the strategy and aspirations, both by the young person and the family (Estudillo et al. [2001]; Naafs and Skelton [2018]; Quisumbing and McNiven [2005]; Urich and Gultiano [2005]). Estudillo et al. [2001] find that household decisions in terms of investment differ between sons and daughters in rural areas, especially if the household possesses the land. Families tend to give land to their sons, and invest in the schooling of their daughters [Estudillo et al. 2001]. However, for landless families, both male and female children generally tend to engage in wage labor (Sakellariou and Lall [2000]; Urich and Gultiano, [2005]). Nonetheless,

young women in rural areas do not stay long in their households; either they marry or migrate to other areas once they reach a certain age [Pomeroy 1987]. Unmarried young women, especially those under 30 years of age, are likely to migrate to urban areas in search of better opportunities (Gultiano and Xenos [2006]; Khoo et al. [1984]; Quisumbing and McNiven [2005]). This urbanward migration—in order to study or work and send remittances to their families—is part of their ambition or the family’s strategy of survival, as documented by various qualitative studies surveying different rural areas in the country (Camacho [1999]; Gultiano and Xenos [2006]; D. V. Hart [1971]; Trager [1984]; Urich and Gultiano [2005]). This reflects societal perceptions about girls, including the increasing reliance of parents on their daughters rather than their sons to ‘*study conscientiously, keep stable jobs, and provide more consistent support in their old age*’ [Paqueo and Orbeta 2019:3]. This has contributed to the so-called ‘feminization’ of urban migration in the Philippines (Gultiano and Xenos [2006]; D. V. Hart [1971]). Evidence supports this, as a study documents migrant daughters being more likely than sons to remit to their families [Gultiano and Xenos 2006]. Yet, the work opportunities for female migrants are limited, especially for those less educated, as they tend to work as domestic helpers, if not in low-paying jobs in the services sector [Gultiano and Xenos 2006]. Interestingly, studies find that when females do migrate to urban areas, they also tend to delay marriage (Camacho [1999]; Gultiano and Xenos [2006]; Hendershot [1971]; Trager [1984]). These studies provide insights on young females’ decisions in their transition to adulthood, such as education, work, and marriage.

### 2.3. Youth not in employment, education, or training

The reality is that aspirations do not always translate to outcomes. Some of the reasons point to labor supply often exceeding labor demand [Manacorda et al. 2017]; education not translating to sufficient skills needed by the industry [Gropello et al. 2010] due to coordination failure between the academe and the industry [Orbeta 2002]; or the labor markets are simply inefficient due to information asymmetry [Lockwood 1991], with labor market incentives penalizing young people and favoring older and more experienced workers [Caroleo et al. 2017]. Thus, many young people face the problems of unemployment, marginalization, and further inequality, resulting in disillusionment or stasis (Heissler [2011]; Naafs and Skelton [2018]).

This may lead to the phenomenon of youth not in education, employment, or training (NEET). The group of NEETs is composed of two types: (1) young people who are available for work and are actively seeking employment (i.e., unemployed); and (2) those who are not available or not seeking work. The reasons for being NEET could likewise vary. Some may lack the resources to navigate the transitions or exercise choice, while others who are more privileged

and able to exercise a significant degree of choice, may decide for themselves [Furlong 2006]. Being NEET is associated with negative long-term outcomes. Young people who are NEETs now may potentially be trapped in a cycle of unemployment, if not suffer ‘wage scarring’, a situation wherein their future wages will be much lower than their counterparts who have not been NEET in their youth (Gregg and Tominey [2005]; Krahn and Chow [2016]). They also tend to engage in riskier activities (e.g. crimes, substance abuse), have poorer physical and mental health, and are associated with higher mortality rates (Bania et al. [2019]; Furlong [2006]; Gutiérrez-García et al. [2018]; Ling and O’Brien [2013]; Maguire [2015]). The society also has a negative perception of NEETs because of this, which leads to further marginalization [Bynner and Parsons 2002]. Some scholars argue that the accumulation of resentment and disengagement may lead to political extremism [Thurlby-Campbell and Bell 2015].

But who are these NEETs? Are they really from disadvantaged groups? Current evidence from other countries such as Mexico [Levison et al. 2001], United States [Gustman and Steinmeier 1981], and United Kingdom [Zuccotti and O’Reilly 2019] indicate that youth unemployment is associated with certain marginalized ethnicities and lower socioeconomic status. In some cases, the reason for being NEET is due to gender roles, with women more likely to be NEET due to homemaking duties and early marriage (Gutiérrez-García et al. [2018]; Levison et al. [2001]). In the Philippines, traditional roles of girls and boys in terms of contribution to the household remain in some parts of the country—girls help their mothers in housekeeping duties, while boys help their fathers in providing income (Pomeroy [1987]; Sakellariou and Lall [2000]). Notably, however, the Philippine literature also provides evidence of investment and attention to girls’ education and employment opportunities (Camacho [1999]; Gultiano and Xenos [2006]; Paqueo and Orbeta [2019]; Urich and Gultiano [2005]). Thus, it is interesting to see which views dominate in relation to girls’ education and work outcomes, especially in a modernizing Filipino society.

Unfortunately, there is not enough research providing evidence on the profile of NEETs in the Philippines, including the magnitude of their presence nationwide. Clarence Batan [2012; 2015], one of the few researchers that study Filipino youth NEETs through ethnographic approaches in selected communities in the country as well as a nationwide survey on young people conducted in 2002<sup>2</sup>, has observed that the phenomenon may not be limited to a particular socioeconomic class, although the poor are more vulnerable. Meanwhile, quantitative studies that take advantage of nationwide datasets in the country have given much attention to the school-work trade-off or the binary distinction of in-school versus out-of-school youth, which leaves plenty of room to analyze this segment of the youth.

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<sup>2</sup> The Young Adult Fertility and Sexuality (YAFS) Study is a series of national surveys on the Filipino youth aged 15 to 24.

## 2.4. Summary

The decisions of young people may go beyond the cost-benefit valuation of schooling. External factors may be influential, such as the family and the community, in their decision-making. The environment likewise plays a role, such as governing laws, publicly-provided services like safety nets, education and labor market systems, socio-cultural values, traditions, and other societal characteristics. Thus, this study will attempt to draw from the reviewed evidence in constructing the analytical framework and in analyzing the results.

## 3. Methodology

### 3.1. Scope of the study

In view of the changes in the education system, the analysis will focus on a specific sub-group of the population—those aged 16 to 19 years old—who are most affected. It is important to note that this study does not track the individuals after the reform happened. Rather, it compares the young people aged 16 to 19 years before the reform (2010–2015) and their counterparts, also aged 16 to 19 years, after the reform (2016–2019). Assuming the education system remains the same, the hypothesis is that the education-work decisions of this group will remain the same across time. Therefore, all else held constant, the change in the education system due to the reform is hypothesized to cause a structural change in the trend in terms of work and education outcomes. This change should occur starting 2016, marking the start of the K-12 Basic Education Reform. Given the differential effects of the reform, the group is further disaggregated as follows.

- Group A: Young people aged 16-17 years are directly affected by the reform. Prior to the reform, they should have already completed compulsory education. After the reform, they are required to take two more years of secondary school.
- Group B: Young people aged 18-19 years should ideally have completed secondary education before and after the reform, and therefore face the more compelling decision trade-off between (tertiary) education and employment. Given the reform's promise that basic education is enough to endow them with employable skills, there is the question of whether indeed they have chosen to forego tertiary education and instead participate in the labor market.

This study has several limitations. First, it is not an impact evaluation, but rather a form of process evaluation, in which the results are indicative of future trends, and therefore could be treated as inputs to policy changes. It does not attempt to make causal claims, but rather looks at associated changes in youth decisions and outcomes before and after the K-12 Basic Education Reform has



been implemented. Second, because of data availability, the post-reform period included in the analysis consists of three years. Therefore, it may be too early to tell if indeed the change in the trend is ‘structural’ in nature, such that the new trend will hold in the future. Third, as this study draws from secondary data, the limitations on the depth and breadth of what the data can demonstrate are acknowledged. Hence, where possible, information from relevant quantitative and qualitative studies will supplement the analysis. Lastly, this study does not differentiate the effects between public and private education. The reform mandates both public and private institutions to conform with the K-12 structure. Therefore, relative costs between public and private institutions do not necessarily change as they are all expected to extend their levels. Furthermore, even if there have been some changes due to the overall increase in the cost of schooling, substitution effects between public and private education are hard to test because of the lack of data.

Nonetheless, the contribution of this research extends to two important objectives: (1) filling the gap in the literature about NEETs in the Philippines within the context of education policy, and (2) providing preliminary analysis following the adoption of the reform.

### *3.2. Data and methods*

This study makes use of the Labor Force Survey dataset spanning the years 2010 to 2019. The Labor Force Survey is an official, nationally representative household survey conducted quarterly by the Philippine Statistics Authority (PSA). This research uses only the results of the third-quarter survey of each year, conducted in July, to reduce seasonality effects. This period is selected because the academic year of most primary and secondary schools starts in June, and it is also the latest available data for the year 2019 at the time the research is conducted.<sup>3</sup> Each survey data is combined to create a pooled cross-section dataset. On average, each annual survey has 200,000 nationally representative individual respondents. When pooled together, the dataset contains a total sample of approximately 1.9 million respondents. Narrowing it down to include only the group 16-19 years of age, the total sample size is reduced to 161,974. In estimating the regression model, the total sample size is reduced to further 160,391 as observations were dropped due to incomplete information on all the variables (Table 1).

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<sup>3</sup> There are some primary and secondary schools that start their academic calendar in August, and these are usually private and international schools. However, more and more basic education schools are likely to shift their academic calendars to August as some universities and colleges are likewise doing the same in recent years.



**TABLE 1. Data Sample**

Year	16-17 yrs	18-19 yrs	Total
2010	8,846	8,212	17,058
2011	8,858	8,177	17,035
2012	9,078	8,291	17,369
2013	9,018	8,538	17,556
2014	8,664	8,076	16,740
2015	8,802	8,565	17,367
2016	7,280	6,885	14,165
2017	7,469	6,783	14,252
2018	7,446	7,137	14,583
2019	7,287	6,979	14,266
Total	82,748	77,643	160,391

Source of raw data: Labor Force Surveys (various years). Author's calculations.

This study has two levels of analysis. First is the descriptive analysis, which looks at trends in youth outcomes. This specifically answers the first research question. To answer the two remaining questions, which aim to link the socioeconomic and demographic profiles of youth with the outcomes, multinomial logistic regression is employed. This method will be able to estimate the likelihood of observable characteristics to be associated with a particular outcome—that is, in education, in employment, or neither. Available information such as demographic characteristics and socioeconomic characteristics will be drawn from the survey data. Survey weights are used to derive nationally-representative estimates. Relevant quantitative and qualitative literature, particularly ethnographic studies on youth based in the Philippines or other similar developing countries, will supplement the discussion of results and interpretation of the findings.

## 4. Analytical framework

### 4.1. Background of the K-12 basic education reform

The K-12 Basic Education Reform effectively extends compulsory schooling to include Grades 11 or 12, which are known as Senior High School (SHS). Prior to the reform, there is no prescribed starting age, although most children enter basic education at six or seven years old. Figure 1 illustrates the changes and the starting age given the different education levels, based on the following provisions of the K-12 Basic Education Reform Act:

“Elementary education refers to the second stage of compulsory basic education which is composed of six (6) years. The entrant age to this level is typically six (6) years old.

“Secondary education refers to the third stage of compulsory basic education. It consists of four (4) years of junior high school education and two (2) years of senior high school education. The entrant age to the junior and senior high school levels are typically twelve (12) and sixteen (16) years old, respectively”.

**FIGURE 1. Appropriate school ages by education level, before and after the reform**

Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Pre-reform			Elementary						Secondary				Tech-Voc or Higher Education					
			Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Yr 1	Yr 2	Yr 3	Yr 4	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5*	
Post-reform		K	Elementary						Secondary					Tech-Voc or Higher Education				
		K	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12	Yr 1	Yr 2	Yr 3	Yr 4*

\*Some higher education programs have one year more than the others, such as engineering. While Tech-Vocational and higher education are not compulsory, they are included here for illustration purposes. Post-baccalaureate studies are not included.

There is some flexibility in the starting age—the law does not provide any penalties if the child enters school at a later age. In other words, even if the law states that the age of entry in Grade 1 is six years old, a child at seven or eight or even nine years could enter, and they (or their parents) will not be penalized. However, the Department of Education has been strict with younger entrants. With the release of a Department Order in 2018 (DO 3, series of 2018), only children who have reached the age of five years by the end of August of that academic year will be allowed to enroll in kindergarten. As for Grade 1 entrants, only those who have (1) completed Kindergarten, or have proof of their capacities to enter the school through an assessment; and (2) have reached six years of age are eligible. Therefore, Figure 1 is a useful illustration of the changes in the expected educational attainment of school-aged children (5–21 years old) before and after the reform.

While the reform presents itself as a curriculum upgrade, the change in the education structure through the two additional years in secondary school could affect the decisions of a certain group of population—in particular, those who are 16 to 19 years of age. Prior to the reform, some would have already graduated from high school, and therefore are faced with the options of either proceeding to tertiary education (technical vocation or higher education) or participating in the labor market full-time. After the reform, they face a different set of options: (1) continue to Senior High School and then proceed to tertiary education; (2) continue to Senior High School and then participate in the labor market full-time; (3) join the labor market full-time; or (4) not be employed nor in education. Given this, the focus of the analysis will be on this group of youth, and the trends in their outcomes concerning education and work.

#### 4.2. Framework of analysis

The first step is to present descriptive analysis, by looking at the trends in youth outcomes across time. Observing the trends is crucial in establishing discernible breaks in the patterns, especially after the reform has been implemented.

The second step involves setting up the regression model for the pooled cross-sectional analysis (Equation (1)).  $Y_{itr}$  represents the outcome of the  $i$ th individual given year  $t$  and region  $r$ . It is hypothesized that the intervention variable (*reform*)—a dummy variable equal to one if the individual is in the post-reform period (2016–2019) and 0 if in the pre-reform period (2010–2015)—is significantly correlated with the changes in the outcomes, thus yielding coefficient  $\beta$ .  $X$  is the vector of covariates, which include individual and household characteristics. Regional fixed effects ( $\delta_r$ ) are controlled.  $\varepsilon_{itr}$  represents the error term, which is assumed to be randomly distributed across observations.

$$Y_{itr} = \alpha + \beta_{it} \text{reform}_{itr} + \gamma' X_{itr} + \delta_r + \varepsilon_{itr} \quad (1)$$

Because the outcomes are categorical and not necessarily ordered, the model cannot be estimated using ordinary least squares. As with limited dependent variables, maximum likelihood estimation through is employed to evaluate choice probabilities among outcomes. Specifically, multinomial logistic regression is utilized to estimate the probability that the young person chooses one of these four categories: 1) NEET, 2) employed, 3) in secondary education, or 4) in tertiary education.<sup>4</sup>

The model in Equation (1) is re-specified in Equations (2.1) to (2.3), where three outcomes are separately regressed against a reference outcome or a pivot point (K). Let  $\theta$  be the vector of coefficients and  $C$  as the vector of all explanatory variables in Equation (1). Thus, the results yield three sets of regression estimates, expressed in log odds, which are transformed to odds ratios (through exponentiation) and consequently, to average marginal effects for ease of interpretation. Thereafter, predicted probabilities are computed to illustrate the results of the estimation.

$$\log \frac{\Pr(Y_{itr} = 1)}{\Pr(Y_{itr} = K)} = \theta_1 * C_{itr} \quad (2.1)$$

$$\log \frac{\Pr(Y_{itr} = 2)}{\Pr(Y_{itr} = K)} = \theta_2 * C_{itr} \quad (2.2)$$

$$\log \frac{\Pr(Y_{itr} = 3)}{\Pr(Y_{itr} = K)} = \theta_3 * C_{itr} \quad (2.3)$$

<sup>4</sup> The multinomial logistic regression banks on the assumption of the independence of irrelevant alternatives (IIA). This means that choosing one category over the other should not depend on the presence or absence of other categories.

Because of data constraints, the model is unable to include certain variables not present in the Labor Force Survey. Therefore, there may be issues relating to omitted variable bias. The following information from the Labor Force Survey will be used in the regression analysis (Table 2).

**TABLE 2. Multinomial regression analysis, independent and dependent variables**

	<b>Variable</b>	<b>Variable type</b>	<b>Description</b>
Dependent	Decision	Categorical (Nominal)	Outcome status = 1, NEET = 2, Employed (not studying) = 3, In secondary education = 4, In tertiary education
Independent	Post-reform period	Categorical (Binary)	Dummy variable indicating period when K-12 reform is being implemented = 1, survey year = 2016 to 2019, if Group A = 1, survey year = 2018 to 2019, if Group B = 0, survey year = 2010 to 2015, if Group A = 0, survey year = 2010 to 2017, if Group B
	Female	Categorical (Binary)	= 1, female = 0, male
	Urban	Categorical (Binary)	= 1, located in urban area = 0, located in rural area
	Married	Categorical (Binary)	Civil status = 1, married or have been married/separated = 0, single
	Household size	Continuous	Number of members in the same household = [1,35]
	Educational attainment of household head	Categorical (Ordinal)	Highest education level reached by the household head = 0, no education = 1, primary education = 2, secondary education = 3, tertiary education
	Interaction: Reform*Sex	Categorical (Binary)	Dummy variable interacting reform period and sex
	Interaction: Reform*Urban	Categorical (Binary)	Dummy variable interacting reform period and location
	Interaction: Reform*HH head	Categorical (Binary)	Dummy variable interacting reform period and level of education of household head
	Interaction: Female*Urban	Categorical (Binary)	Dummy variable interacting female and location
	Interaction: female*married	Categorical (Binary)	Dummy variable interacting female and civil status
Fixed effects	Regional variables	Categorical (Binary)	Dummy variables of all regions except NCR (National Capital Region as the reference) to control for regional variations

The model has five independent variables that refer to the different characteristics relating to the individual and household characteristics. These include sex, location, civil status, parental education, and household size.

The sex variable is of particular interest because of the competing views coming from traditional gender roles and from an increasingly modernized society that recognizes the value of investing in girls. Should traditional values prevail, it is hypothesized that girls are most likely to be NEET, given their expected roles in the household. On the other hand, if modernization has become more dominant, then girls would be less likely to be NEET and more likely to be in school.

The location is interesting because of the divide between rural and urban areas in terms of opportunities. Urban areas are likely to offer economic opportunities that allow employment, and they also tend to have better infrastructure that facilitates access to education. Thus, it will be interesting to determine which outcome dominates, holding everything else fixed. On the flip side, rural areas offer fewer economic opportunities and infrastructure. Thus, this model will test the hypothesis that young people here are more likely to be NEET.

A young person's civil status may also affect his/her work or education decision. On the one hand, there is more pressure to seek employment to finance household needs, especially if there is a child that needs support. However, this may also be confounded by gendered roles. Girls will likely become NEETs to take care of the child, while boys will be in charge of finding the resources. However, it may also not be the case due to evolving values on these roles, and the availability of support coming from parents. Holding all else constant, it would be interesting to find the respective probabilities of being NEET, employed, or even in school for married young people.

Meanwhile, as seen in the literature review, studies in the Philippines found that the parents' or the household head's education is a strong predictor of youth schooling or work, due to its relationship with resource availability in the household, capturing the transmission and conversion of economic capital, as well as the intergenerational transmission of aspirations.

Finally, household size is included to determine the relationship of a large household on youth decisions. It is hypothesized that having more members of the family stretches household resources, thereby compelling young people to contribute to the household, either through employment or household production. This is especially because of family dynamics and expected filial obligations of children, which have been found in the literature as strong determinants of youth decisions.

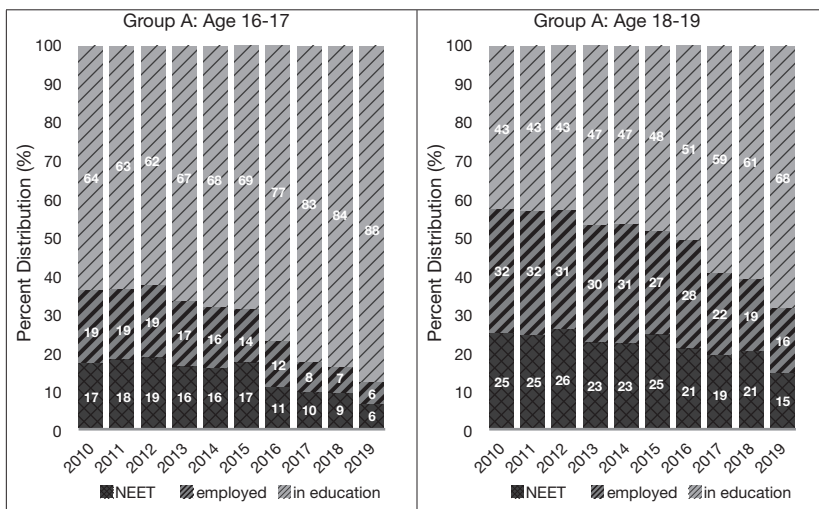
The regression model also includes an independent variable indicating the time period—that is, whether the youth is in the period before or after the reform. In including this variable, this study tests the hypothesis that the changes in the education system through education reform are associated with changes in youth decisions as well as youth outcomes. It should be noted that the two sample groups have different pre-reform and post-reform periods because the timing of the effects differs. The effects of the reform on Group A are observed in 2016, at the start of the implementation. Meanwhile, the effects on Group B are observed from 2018.

Additionally, interactions to recognize the interplay of factors based on the literature review, such as (a) sex and location, and (b) sex and civil status are included. Furthermore, the model includes the interaction of the individual characteristics with the reform variable to determine if there are any associated changes in the relationships between these characteristics and outcomes following the reform’s implementation. In doing so, the study assesses whether inequality in life outcomes has widened or narrowed following the reform. Finally, regional variables are included as fixed effects, leaving the biggest and most economically active region (National Capital Region) as the reference, to control for unobserved variation across regions. This takes into account the variations in terms of the level of economic development, opportunities, cultural differences (as the Philippine peninsula is diversified in terms of language and culture), and other structural differences.

### 5. Results and analysis

Across the ages 16 to 19, there is a rising trend in the share of those in education, indicating youth decisions favoring education (Figure 2). There are, however, differences between the group of 16–17 years old (Group A) and the group of 18–19 years old (Group B). First, the older group (Group B) shows higher proportions of NEET. Second, the timing of when the effects of the reforms are largely observed varies between age groups. The changes in the younger group started in 2016, while the older group felt the effects as early as 2017. This is expected since the reform affects the first group at the start of the implementation, and then as the same cohort advances the next year, the effect is carried over. Furthermore, the changes in Group B are even more dramatic in 2019. Disaggregating these categories, there are more NEETs not looking for work than those actively seeking employment (Figure 3).

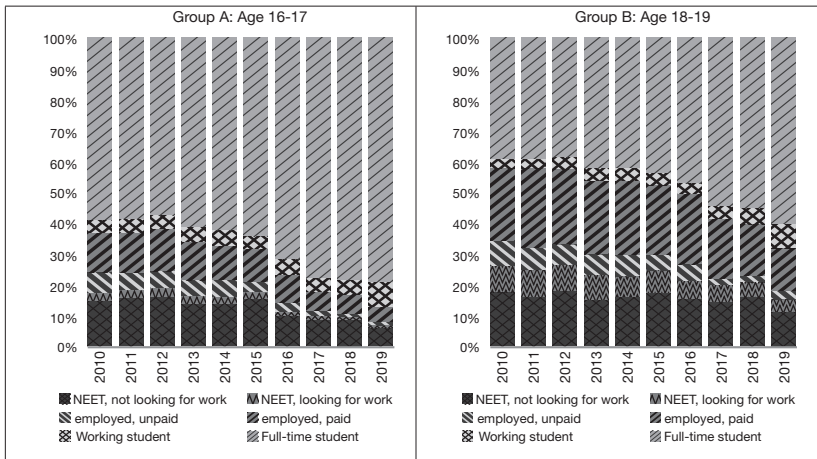
**FIGURE 2. Youth school-work outcomes, 2010-2019**



NEET = Not in education, employment, or training.

Source of raw data: Labor Force Surveys (various years). Author's calculations.

**FIGURE 3. Youth school-work outcomes, disaggregated**



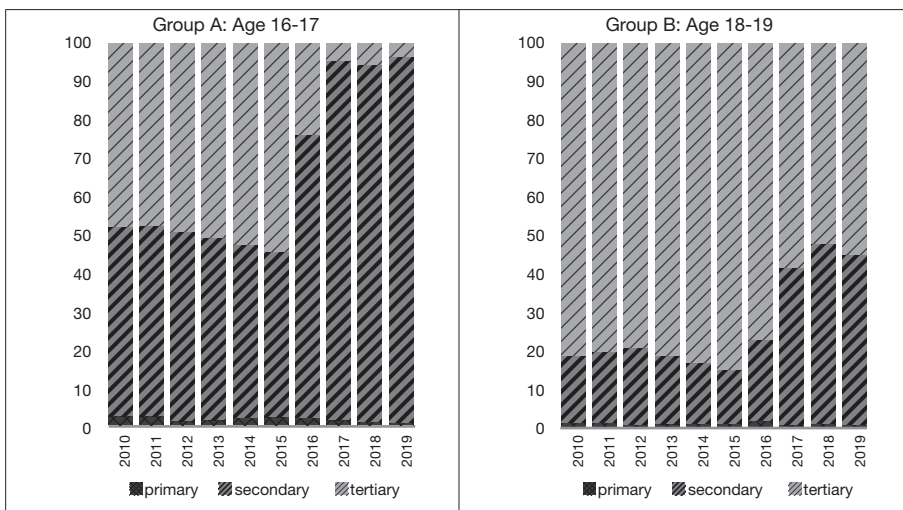
NEET = Not in education, employment, or training.

Note: Unpaid work includes those who are working in family enterprises and excludes housekeeping duties.

Source of raw data: Labor Force Surveys (various years). Author's calculations.

Those enrolled have varying levels of education, and some are not at the education level ideal for their age. For example, about 20 percent of young people aged 18–19 years are still in secondary level between the years 2010 and 2015 (Figure 4). These trends suggest that either children are not entering school at the right age or there have been instances of delays and repetition that hinder the child to progress.

**FIGURE 4. In education: current level of study**



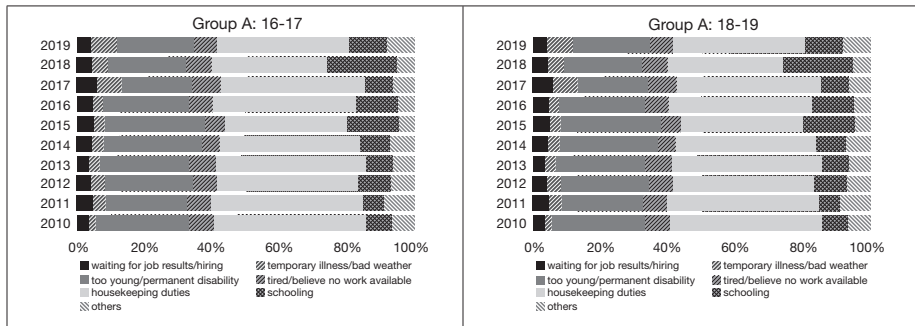
Source of raw data: Labor Force Surveys (various years). Author's calculations.



The significant rise in the share of studying in secondary education for those 18–19 years of age, especially in 2017 indicates that despite being over-aged, they have been incentivized to enroll in basic education. However, another policy may have caused this shift. In 2017, the government began subsidizing tuition fees in publicly-funded colleges and universities and worked towards the development of a law to institutionalize this policy. In 2018, the Universal Access to Quality Tertiary Education Act was passed, which not only made public tertiary education institutions tuition-free but also included financial support for those studying in private tertiary education institutions. Because of this law, there are more incentives to complete basic education and proceed to tertiary education. Therefore, the enactment of this policy possibly confounds the effects of the K-12 reform. Unfortunately, due to the timing of the implementation of these reforms and the limitations of the Labor Force Survey, disentangling their respective effects is not feasible.

Being NEET does not necessarily mean inactivity. Both age groups cited household duties as the main reason for opting out of the labor force (Figure 5). Housekeeping duties require time and effort, equivalent to a day’s work, and could even be valued more than the income earned by the household head [Gronau 1980]. A cross-tabulation of the reasons by gender (not shown here) reveals that in the sample, the number of females citing housekeeping as the reason for being NEET is three times larger than males.

**FIGURE 5. NEET: Top reasons for not looking for work**



Source of raw data: Labor Force Surveys (various years). Author's calculations.

There are no significant shifts in patterns before or after the reform, suggesting that the same reasons for these NEETs have endured despite changes in the education structure. Unfortunately, the survey does not ask why they are not in education. Therefore, it is difficult to make a general claim that the reasons why they do not look for work could be applied to why they do not choose to continue their studies. The direction of causation is also not definitive—perhaps they have chosen to discontinue their studies, so they are doing household duties instead.

Studies in the Philippines have looked closely at the reasons why children drop out of education using different household survey data. These studies find that the top reason for dropping out is due to lack of personal interest (Albert et al. [2012]; David et al. [2018]), and not because they need to work. In fact, only ten % of the surveyed respondents have cited employment as their reason for dropping out. Thus, it is important to find out the reasons why students are losing interest in education. One can speculate a number of reasons based on the literature studying other countries, albeit needing validation in the Philippine context. One, young people might have been demotivated to study because of school-related factors, including quality of teaching and the student's persistent disappointing performance in school [Frostad et al. 2015]. Another could be due to "unsociability and conflict at school" [Momo et al. 2019: 20]. This could be investigated further in a separate study, drawing from a more holistic approach using mixed methods research that takes aspirations into account.

### 5.1. Regression analysis

The trends in recent years, especially after the reform, indicate that more and more young people are choosing to be in education, and less so in employment. Still, some are in less desirable outcomes, the NEETs. Thus, the regression analysis seeks to answer the questions: (1) who are likely to be in education, in employment, or NEET? And (2), after the reform, have there been changes?

Table 3 provides the statistical summary of the data and the variables used in the regression analysis. The dependent variable is the outcome of the youth, and the independent variables are the socioeconomic and demographic characteristics of the youth and his/her household.

**TABLE 3. Summary statistics of variables**

Variable	Group A: 16-17 yrs	Group B: 18-19 yrs
Observations (N)	82,748	77,643
<b>DEPENDENT VARIABLE</b>		
<b>Pre-reform status (distribution, %)</b>		
(1) NEET	17.6%	23.5%
(2) Employed	17.5%	29.2%
(3) in Secondary Education	31.5%	10.2%
(4) in Tertiary Education	33.5%	37.0%
<b>Post-reform status (distribution, %)</b>		
(1) NEET	9.2%	17.9%
(2) Employed	8.2%	17.7%
(3) in Secondary Education	75.1%	29.5%
(4) in Tertiary Education	7.5%	34.9%
<b>INDEPENDENT VARIABLES</b>		
<b>Individual characteristics</b>		
<b>Sex (distribution, %)</b>		
Male	51.2%	50.9%
Female	48.8%	49.1%

**TABLE 3. Summary statistics of variables (continued)**

Variable	Group A: 16-17 yrs	Group B: 18-19 yrs
<b>Location (distribution, %)</b>		
Urban	44.3%	46.7%
Rural	55.7%	53.3%
<b>Civil Status (distribution, %)</b>		
Single	97.6%	91.2%
Married (or have been married)	2.4%	8.8%
<b>Household characteristics</b>		
<b>Highest level reached by Household Head (distribution, %)</b>		
no education	2.5%	2.4%
primary	38.9%	37.9%
secondary	37.4%	37.6%
tertiary	21.1%	22.1%
<b>Household Size, Average</b>	6.2	6.2

Note: Group A post-reform period: 2016 to 2019; Group B post-reform period: 2018-2019

## 5.2. Characteristics significantly associated with the outcomes

The results of the multinomial regression, through average marginal effects, are presented in Table 4 and Table 5 for Group A and Group B, respectively.<sup>5</sup> The coefficients are interpreted as the associated change in the probabilities of being in a particular outcome, given a unit change in the predictor, holding all other factors fixed. The results of the multinomial regression are transformed to predicted probabilities (Tables 6 and 7), which is useful in drawing out the effects of interacting variables (e.g., interaction of location-sex, civil status-sex, etc.) on the likelihood of being in any of these outcomes. In interpreting the predicted probabilities, the study only looks at the statistically significant predictors and their interactions, based on the results of the odds ratios.<sup>6</sup> The following discussions summarize the findings of the characteristics associated with the different outcomes.

Based on the results of the average marginal effects (Tables 4 and 5), young females tend to be NEET more than their male counterparts, holding all other predictors constant. Young males, on the other hand, tend to be working. The urban youth, on average, are more likely to be NEET or to advance to tertiary education than their rural counterparts. The rural youth, meanwhile, have a higher probability of being employed. Furthermore, being married increases the likelihood of being NEET and working and reduces the probability of being in education.

<sup>5</sup> The logits, which are the coefficients resulting from the multinomial logistic regression, are difficult to interpret. At best, they show relationships, but they do not provide the magnitude. Hence, the results are transformed into marginal effects.

<sup>6</sup> See Appendix One for the results of the odds ratios.

**TABLE 4. Results from the multinomial logistic regression for 16-17 years of age**  
(Average marginal effects, weighted)

Variables	Outcomes (16-17 yrs old)			
	NEET	Employed	In Secondary	In Tertiary
<b>Reform effect</b>				
postreform1=0 (ref.)				
postreform1=1	-0.080***	-0.091***	0.433***	-0.262***
<b>Sex</b>				
male (ref.)				
female	0.020***	-0.098***	0.010**	0.068***
<b>Location</b>				
rural (ref.)				
urban	0.016***	-0.033***	-0.021***	0.039***
<b>Highest level reached by Household Head</b>				
<b>Head</b>				
no education (ref.)				
primary	-0.029**	-0.101***	0.069***	0.061***
secondary	-0.060***	-0.185***	0.082***	0.162***
tertiary	-0.125***	-0.221***	0.066***	0.280***
<b>Civil Status</b>				
single (ref.)				
married	0.302***	0.172***	-0.325***	-0.148***
<b>Number of household members</b>	0.004***	0.005***	0.006***	-0.015***
Observations	82,741	82,741	82,741	82,741

1. Level of significance: \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ 

2. Coefficients on the regional variables not shown here.

**TABLE 5. Results from the multinomial regression model for 18-19 years of age**  
(Average marginal effects, weighted)

Variables	Outcomes (18-19 yrs old)			
	NEET	Employed	In Secondary	In Tertiary
<b>Reform effect</b>				
postreform2=0 (ref.)				
postreform2=1	-0.047***	-0.115***	0.190***	-0.028***
<b>Sex</b>				
male (ref.)				
female	0.079***	-0.164***	-0.029***	0.114***
<b>Location</b>				
rural (ref.)				
urban	0.013**	-0.030***	-0.008*	0.026***
<b>Highest level reached by Household Head</b>				
<b>Head</b>				
no education (ref.)				
primary	0.005	-0.113***	0.015	0.093***
secondary	-0.013	-0.222***	-0.002	0.236***
tertiary	-0.094***	-0.302***	-0.043***	0.438***
<b>Civil Status</b>				
single (ref.)				
married	0.253***	0.187***	-0.114***	-0.325***
<b>Number of household members</b>	0.006***	0.005***	0.005***	-0.016***
Observations	77,630	77,630	77,630	77,630

1. Level of significance: \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$ 

2. Coefficients on the regional variables not shown here.

Interacting the sex and location dimensions (Tables 6 and 7), young women in rural areas tend to have the highest predicted probability of being NEET, more than their urban counterparts as well as male counterparts (young men in rural areas). Young men in rural areas have a higher probability of finding employment compared with their male counterparts. Reviewing studies about the gendered roles in Philippine rural communities, this is not surprising. Work in rural areas is a predominantly male sphere, especially as agricultural activities like land preparation, harvesting, and threshing activities require manual labor. Furthermore, rural communities assign traditional roles between girls and boys in terms of contribution to the household. Female children are expected to help their mothers in child-rearing and household management, while male children work with their fathers in fishing or farming (Pomeroy [1987]; Sakellariou and Lall [2000]).

Interacting civil status and sex (Tables 6 and 7), the probability of being NEET increases remarkably for young girls when they marry—70 percent for 16-17 years old and 75 percent for the 18-19 years old—much higher than their male counterparts and even unmarried young girls (20 percent or less). This may be partly due to traditional roles assigned to married women, such as childcare and housekeeping [Alcantara 1994]. However, this may not necessarily be a long-term situation, but a transitory status as the young woman tends to the child in his/her early years. Unfortunately, the dataset does not allow confirmation of this speculation, as it only records the decision or outcome at a specific point in time. A longitudinal analysis is more helpful in validating this, which requires different survey data. Nonetheless, recent studies show that gendered roles in marriage—where women only focus on household management and child-rearing—are eroding as more and more married women are joining the labor force, not just domestically but also internationally, and complementing household income by engaging in entrepreneurial activities (Alcantara [1994]; Gultiano and Xenos [2006]; McKay [2005]).

On the end of the spectrum, young females are significantly more likely than males to be in school, and more likely to advance to tertiary education at the age of 18–19 years. This supports earlier studies showing that Filipino females outperform boys in basic education, enabling them to advance to tertiary education, and thus the results of more females completing college degrees than males (DeGraff et al. [1996]; Paqueo and Orbeta [2019]). The results suggest that while females, on average, have a bigger probability to be NEET, especially when compounded by factors such as marriage and remaining in rural areas, the probability of completing education or even progressing to tertiary education is higher if given investments.

Parental education is also significantly related to youth outcomes. The increasing level of parental education is associated with a decreasing probability of the youth working, being NEET, and being delayed in schooling (i.e., in secondary education at age 18-19). Two interpretations can be derived from this finding. One, more educated parents exert less pressure on their young children to work, possibly because they are less constrained in terms of household resources. Two, the aspirations of the parents are being transmitted to their children. The

first point anchors on empirical evidence in the Philippines that has shown a clear link between youth labor and socioeconomic characteristics, such as household income and parental education (Aldaba et al. [2004]; Camacho [1999]; Sakellariou and Lall [2000]). These studies argue that schooling costs, perceived poor quality of education, and perceived low benefits of schooling are key considerations of parents in pulling their children out of education and making them work. Thus, resource constraints and poverty, often associated with the lack of education of household heads, become deterrents in choosing education. The second point is based on findings concerning the intergenerational transmission of aspirations. A qualitative study in the Philippines has found that youth aspirations in education and employment-related decisions are almost similar to their parents' [Torres 1982]. In particular, young people tend to drop out of school and seek employment if the father has only reached primary school. Meanwhile, a recent study in the Philippines, using a longitudinal and intergenerational survey dataset in a particular locality in the Philippines (Metropolitan Cebu), has found that mothers' educational aspirations, experiences, and educational attainment are strong predictors of the child's educational attainment [Gipson and Hindin 2015]. This provides evidence of the gains of educating the youth, especially girls, as the effects are transmitted intergenerationally.

Lastly, increasing household size is positively associated with being NEET, employed, and delays in schooling for those 18-19 years old (i.e., being in secondary instead of tertiary education). This is consistent with some findings in studies in the Philippines that look into relationships of family size and education-work decisions. Gipson and Hindin [2015] find in their longitudinal study that children whose household size is seven or greater have higher risks of not completing school in a given year.

Finally, the results show that on average, the period of reform is associated with a reduction in the probabilities of being NEET and being employed. From an education policy perspective, these associated changes represent improvements as more young people are in school. As expected, there is an associated decrease in the probability of being in tertiary education for the 16-17 years age group and an increase in the likelihood of being in secondary education due to the introduction of SHS.

It is interesting to find that for aged 18-19 years, the reform is associated with a reduction in the probability of being in tertiary education, although they should have already been at that level. This is indicative of widespread delays in schooling, but that the K-12 reform might have induced more young people to complete their secondary education due to the reform's promise. However, the associated reduction of the probability of being employed suggests two things: either young people after the reform are not easily absorbed by the labor market (labor demand issue), or they simply choose to not work and pursue further schooling (labor supply consideration). Moreover, with the introduction of the free tuition policy starting in 2017, there are added incentives to proceed to tertiary education. Therefore, there is reason to suspect that more young people will want to complete secondary schooling, even if they are delayed.

**TABLE 6. Results from the multinomial regression model for 16-17 years of age**  
(Average predicted probabilities, weighted)

Variables	Outcomes (16-17 yrs old)			
	NEET	Employed	In Secondary	In Tertiary
<b>Reform effect</b>				
postreform1=0 (ref.)	0.174***	0.174***	0.315***	0.337***
postreform1=1	0.094***	0.083***	0.748***	0.075***
<b>Sex</b>				
male (ref.)	0.128***	0.187***	0.488***	0.197***
female	0.148***	0.089***	0.498***	0.265***
<b>Location</b>				
rural (ref.)	0.136***	0.151***	0.502***	0.211***
urban	0.152***	0.117***	0.481***	0.250***
<b>Highest level reached by Household Head</b>				
no education (ref.)	0.205***	0.291***	0.422***	0.083***
primary	0.175***	0.189***	0.491***	0.144***
secondary	0.144***	0.106***	0.504***	0.245***
tertiary	0.079***	0.070***	0.488***	0.363***
<b>Civil Status</b>				
single (ref.)	0.130***	0.135***	0.500***	0.234***
married	0.432***	0.307***	0.175***	0.086***
<b>Reform effect * Sex</b>				
Male				
postreform1=0 # male	0.153***	0.228***	0.332***	0.287***
postreform1=1 # male	0.090***	0.127***	0.716***	0.067***
Female				
postreform1=0 # female	0.187***	0.121***	0.300***	0.391***
postreform1=1 # female	0.090***	0.040***	0.787***	0.083***
<b>Reform effect * Location</b>				
Rural				
postreform1=0 # rural	0.167***	0.196***	0.326***	0.311***
postreform1=1 # rural	0.089***	0.084***	0.759***	0.067***
Urban				
postreform1=0 # urban	0.185***	0.141***	0.307***	0.366***
postreform1=1 # urban	0.101***	0.081***	0.736***	0.082***
<b>Reform effect * HH head education</b>				
no education				
postreform1=0 # no education	0.206***	0.325***	0.346***	0.123***
postreform1=1 # no education	0.202***	0.242***	0.532***	0.024**
primary				
postreform1=0 # primary	0.210***	0.234***	0.349***	0.208***
postreform1=1 # primary	0.124***	0.125***	0.701***	0.050***
secondary				
postreform1=0 # secondary	0.185***	0.139***	0.316***	0.360***
postreform1=1 # secondary	0.084***	0.058***	0.781***	0.077***
tertiary				
postreform1=0 # tertiary	0.099***	0.100***	0.267***	0.535***
postreform1=1 # tertiary	0.051***	0.027***	0.811***	0.111***
<b>Location * Sex</b>				
rural # male				
rural # male	0.114***	0.218***	0.495***	0.173***
rural # female	0.150***	0.085***	0.514***	0.251***
urban # male				
urban # male	0.148***	0.141***	0.488***	0.222***
urban # female	0.147***	0.096***	0.477***	0.280***
<b>Civil Status * Sex</b>				
single # male				
single # male	0.127***	0.179***	0.495***	0.199***
single # female	0.134***	0.088***	0.508***	0.270***
married # male				
married # male	0.168***	0.475***	0.232***	0.125***
married # female	0.708***	0.129***	0.116***	0.047***
Observations	82,741	82,741	82,741	82,741

Notes:

1. Level of significance: \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$
2. Coefficients on the regional variables not shown here.



**TABLE 7. Results from the multinomial regression model for 18-19 years of age**  
(Average predicted probabilities, weighted)

Variables	Outcomes (18-19 yrs old)			
	NEET	Employed	In Secondary	In Tertiary
<b>Reform effect</b>				
postreform1=0 (ref.)	0.233***	0.293***	0.103***	0.372***
postreform1=1	0.186***	0.177***	0.293***	0.344***
<b>Sex</b>				
male (ref.)	0.172***	0.358***	0.156***	0.313***
female	0.251***	0.194***	0.128***	0.428***
<b>Location</b>				
rural (ref.)	0.218***	0.282***	0.146***	0.354***
urban	0.231***	0.252***	0.138***	0.379***
<b>Highest level reached by Household Head</b>				
no education (ref.)	0.249***	0.463***	0.147***	0.141***
primary	0.255***	0.350***	0.162***	0.233***
secondary	0.236***	0.241***	0.145***	0.377***
tertiary	0.155***	0.161***	0.104***	0.579***
<b>Civil Status</b>				
single (ref.)	0.188***	0.264***	0.153***	0.395***
married	0.441***	0.451***	0.038***	0.070***
<b>Reform effect * Sex</b>				
Male				
postreform2=0 # male	0.178***	0.385***	0.118***	0.319***
postreform2=1 # male	0.146***	0.260***	0.304***	0.289***
Female				
postreform2=0 # female	0.264***	0.216***	0.087***	0.433***
postreform2=1 # female	0.201***	0.109***	0.283***	0.407***
<b>Reform effect * Location</b>				
Rural				
postreform2=0 # rural	0.226***	0.308***	0.110***	0.356***
postreform2=1 # rural	0.188***	0.186***	0.282***	0.344***
Urban				
postreform2=0 # urban	0.243***	0.274***	0.093***	0.389***
postreform2=1 # urban	0.184***	0.166***	0.306***	0.344***
<b>Reform effect * HH head education</b>				
no education				
postreform2=0 # no education	0.252***	0.495***	0.108***	0.145***
postreform2=1 # no education	0.240***	0.342***	0.296***	0.122***
primary				
postreform2=0 # primary	0.266***	0.381***	0.120***	0.233***
postreform2=1 # primary	0.210***	0.232***	0.323***	0.234***
secondary				
postreform2=0 # secondary	0.248***	0.263***	0.105***	0.384***
postreform2=1 # secondary	0.192***	0.159***	0.298***	0.351***
tertiary				
postreform2=0 # tertiary	0.160***	0.178***	0.069***	0.593***
postreform2=1 # tertiary	0.135***	0.097***	0.241***	0.527***
<b>Location * Sex</b>				
rural # male				
rural # male	0.148***	0.406***	0.161***	0.286***
rural # female				
rural # female	0.263***	0.175***	0.131***	0.431***
urban # male				
urban # male	0.201***	0.304***	0.153***	0.342***
urban # female				
urban # female	0.235***	0.220***	0.122***	0.423***
<b>Civil Status * Sex</b>				
single # male				
single # male	0.175***	0.324***	0.167***	0.334***
single # female				
single # female	0.204***	0.199***	0.138***	0.460***
married # male				
married # male	0.151***	0.724***	0.048***	0.077***
married # female				
married # female	0.744***	0.164***	0.028***	0.064***
Observations	77,630	77,630	77,630	77,630

Notes:

1. Level of significance: \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$
2. Coefficients on the regional variables not shown here

## 5.2. Structural inequalities and changes following the reform

The results of the regression analysis suggest that differences in outcomes are characterized by structural inequalities. Across groups, the outcome of youth being in education is associated with characteristics such as high educational attainment of household head, being single, and low family size. However, it is important to look at the intersectionality of characteristics rather than looking at each predictor separately. This means rather than focusing on one dimension while holding all other variables fixed, combining multiple sources of disadvantages or advantages acknowledges the interplay of different dimensions of inequality (McBride et al. [2015]; Zuccotti and O'Reilly [2019]).

In this sub-section, hypothetical profiles are constructed based on different combinations of the independent variables to differentiate between advantaged and disadvantaged groups. This means the control variables of the specified logistic regression model are set to specific values, which are assumed to be characteristics associated with being advantaged or disadvantaged.<sup>7</sup> As such, the advantaged group has a fixed set of characteristics that differ from the disadvantaged group.

This study hypothesizes that a young person who is advantaged is in an urban area, where infrastructure and economic opportunities are more accessible; and if employed, wages are higher and more stable than rural work. She/he resides in a household of four,<sup>8</sup> which means that fewer resources are needed to sustain it. Lastly, the household head—presumably one who is the breadwinner and makes decisions for the family—is highly educated, which is a predictor of the household's resources, from material support to education support.

The disadvantaged young person is the opposite—in rural areas, in a household of ten,<sup>9</sup> and whose household head has not studied at all. These characteristics put the youth at a disadvantage because rural areas tend to have poorer infrastructure and therefore have lower accessibility. Incomes in rural areas are lower and most of the work opportunities are seasonal if not precarious. Additionally, as discussed in the previous sub-section, the evidence points to high fertility or increasing household size as negatively associated with schooling decisions. A big household places greater demands for household duties. Another possibility is the effect of large households on the motivation of the youth to study, due to lack of space, time, and resources.

The lack of education of the household head is associated with a myriad of challenges, such as lower and unstable incomes, lower assets, and less support for education-related endeavors. These are findings widely observed in the literature on intergenerational transmission of social, cultural, and economic capital (Gipson and Hindin [2015]; Juárez [2015]).

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<sup>7</sup> Instead of the usual mean values when calculating average predicted probabilities, as presented in Tables 6 and 7 in the previous sub-section.

<sup>8</sup> Based on the overall distribution of household size, four members in the household correspond to the 25th percentile.

<sup>9</sup> Based on the overall distribution of household size, ten members in the household correspond to the 95th percentile.

Table 8 shows the distribution of the sub-sample given these assumed attributes of advantaged and disadvantaged groups. While this sub-sample represents only three percent of the total sample, the number of observations is still substantial (greater than 4,000) to draw analysis from. Furthermore, this supports the existence of such realities even if marginal. To provide a more nuanced analysis, outcomes of boys and girls are differentiated. Afterward, the estimated parameters of the logistic regression model are applied to compute the predicted probabilities of each group. These predicted probabilities show the likelihood of each group to be in a certain outcome (i.e., NEET, employed, in secondary or in tertiary education).

**TABLE 8. Distribution of the sub-sample of hypothetical profiles**

	Girls	Boys
<b>16-17 y/o</b>		
Pre-reform Sub-Sample	684	642
Distribution, %		
Advantaged	95.7	94.5
Disadvantaged	4.3	5.5
Post-reform Sub-Sample	362	411
Distribution, %		
Advantaged	96.3	96.7
Disadvantaged	3.7	3.4
<b>18-19 y/o</b>		
Pre-reform Sub-Sample	881	826
Distribution, %		
Advantaged	97.8	94.7
Disadvantaged	2.2	5.3
Post-reform Sub-Sample	185	165
Distribution, %		
Advantaged	95.7	96.2
Disadvantaged	4.3	3.8

"Advantaged": urban, household size = 4, and household head tertiary level educated

"Disadvantaged": rural, household size = 10, and the household head has no education

"Pre-reform": 2010-2015

"Post-reform": 2016-2019

Assuming these two polarized scenarios, the differences and the inequalities in the system are observed. This is even more perceptible when disaggregated by sex. Figures 6 and 7 show the predicted probabilities of disadvantaged and advantaged females and males in the two age groups, respectively. The predicted probabilities before and after the reform are compared to see whether the reform is associated with any changes in these groups. The results show that while there is a general increase in the likelihood of being in the more desirable outcomes (being in education), inequalities remain largely unchanged after the reform.

One, disadvantaged females have the highest predicted probabilities of being NEET. Considering how mothers' education plays a role in their children's education and future capabilities, this is troubling as it may contribute to the transmission of poverty and widening inequalities across generations. Even though there is a wide perception of the value of education and the seemingly high investment of families in females, the reality is that there are females left behind. These are usually girls in rural areas, have a large household to support, and likely to marry at an early age unless they migrate to urban areas.

Second, disadvantaged males still have the highest probabilities of being employed, although there have been associated reductions in the probabilities in both age groups. They also have the lowest probabilities of being in education (secondary and tertiary combined). This could be an indication of the prevalence of the gendered role of males, especially in rural areas. In particular, the study by Estudillo et al., [2001] on family investment strategy—wherein males inherit the land for working and females are sent to school—may explain this result. However, this leads to the phenomenon of boys being left behind in the Philippines.

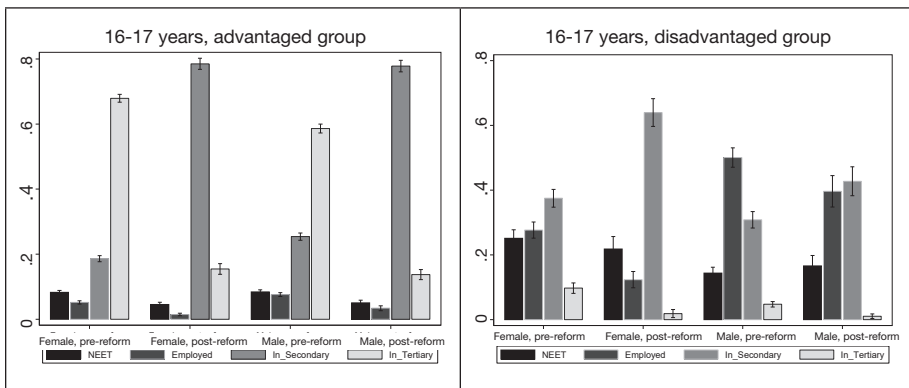
Third, both young men and women in advantageous positions are more likely to be in education. This is expected, considering that they have more resources, face fewer pressures of working or contributing to household production because the household is relatively small, and education institutions are accessible. What is surprising, however, is the existing probability of being NEET in these groups, albeit less than 20 percent—still lower than the probabilities in the disadvantaged group. This suggests that the availability of resources and accessibility may not necessarily prevent one from being NEET. Consequently, one can even speculate that because of these resources, they can afford to be NEET. This does not automatically mean that they aspire to be inactive. One may speculate that a young person who faces fewer pressures to go to school or find a job immediately can afford to wait for better opportunities if it pays off in the long run. In some cases, because of the safety net provided by the family, they may also take the time to be inactive, albeit not necessarily for a long period of time.

Lastly and quite worryingly, disadvantaged males have higher probabilities of being NEET after the reform. One possible reason is waning employment opportunities in rural areas, due to the declining productivity in the agriculture sector [Urich and Gultiano 2005]. Another reason—although highly speculative and needing verification on the ground—is the re-focusing of household spending priorities due to the increase in the cost of education. Recalling the rural household strategy of investment regarding their children, it is possible that given a large household and the additional two years in basic education that require resources, families may have instead focused on the girls. While the increase in the probability of being NEET of these disadvantaged males is marginal, this merits investigation and monitoring in the future, as it may lead to worsening inequalities. In the literature, male NEETs are the most susceptible to substance

abuse, delinquency, and mental illnesses (Bania et al. [2019]; Furlong [2006]; Gutiérrez-García et al. [2018]; Ling and O’Brien [2013]; Maguire [2015]). While evidence on the long-term effects of Filipinos being NEET remains a gap in the literature, research in other countries provide evidence of NEETs finding difficulties in getting back to education and being absorbed by the labor market, especially as they grow older and lack the necessary skills and experience [Gregg and Tominey 2005]. More than economic penalties, perceptions in the Filipino society associate being NEET or an ‘istambay’ with problematic behaviors such as drinking, gambling, and drug abuse [Batan 2012].

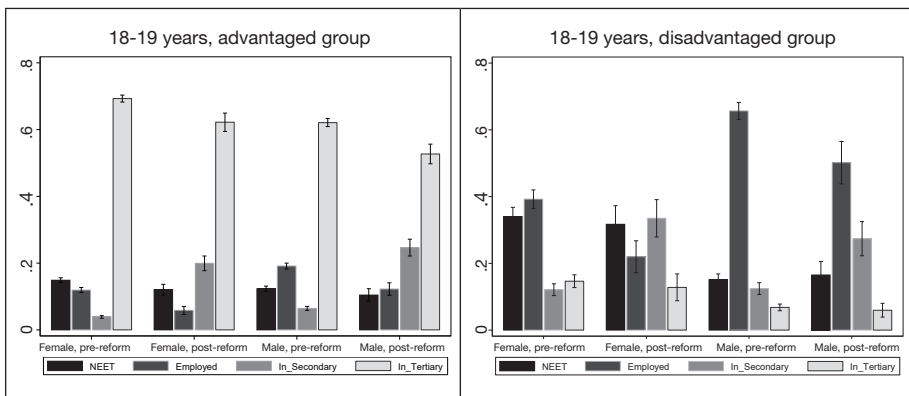
While one might argue the extremeness of these scenarios, these are realities present in society. These findings also highlight the fact that despite expanding access to education, outcomes will differ across groups, especially as advantages and disadvantages seem to compound each other.

**FIGURE 6. Average predicted probabilities, scenarios for youths aged 16-17 years**



Spikes indicate 95% confidence intervals. The bars represent the predicted probability (y-axis) of being NEET, employed, in Secondary level, or Tertiary level given the category (x-axis).

**FIGURE 7. Average predicted probabilities, scenarios for youths aged 18-19 years**



Spikes indicate 95% confidence intervals. The bars represent the predicted probability (y-axis) of being NEET, employed, in Secondary level, or Tertiary level given the category (x-axis).

## 6. Discussion and conclusion

This research has found that the last decade has seen an increasing share of the youths to be in education, accompanied by declining proportions of them in employment and NEET. There are certain characteristics associated with each outcome. Being in education is associated with characteristics such as being single, high educational attainment of household head, and low family size—conditions highly associated with affluence. Meanwhile, young women tend to be NEET more than their male counterparts, while young men are more likely to be working. The urban youth, on average, are more likely to be NEET or to advance to tertiary education than their rural counterparts. Interacting sex with the location and civil status variables, the findings point to girls in rural areas and married girls having the highest probability of being NEET (compared with all other groups, such as rural males, urban females, and urban males). This suggests that when traditional roles prevail, young women are likely to be NEET.

As for pervading inequalities, combining multiple sources of disadvantage or advantage reveal stark differences across groups. Those in the disadvantaged groups (larger households, in rural areas, uneducated household heads) tend to have higher probabilities of being NEET or working. The advantaged groups (smaller households, in urban areas, and college-educated household heads) have higher probabilities of being in education. Interestingly, NEETs are present even in advantaged groups, thus suggesting that being NEET is not necessarily due to resource constraints, but because they can also afford to be one. One reason, as drawn from sociocultural studies in the Philippines, is the availability of informal safety nets provided by the family or the community. The results also reveal that young women in the disadvantaged group (both age groups) tend to have the highest probability of being NEET. On the one hand, this could be due to prevailing traditional viewpoints on gender, especially in rural areas. On the other hand, it might be due to constraints stemming from the inaccessibility of schools or scant job opportunities in these areas.

As for the question seeking to investigate changes in outcomes following the reform, the results show an associated drop in the probabilities of being NEET and being employed, holding all else constant. As expected, there is an associated reduction in the probability of being in tertiary education for the 16-17 years age group, and a rise in the likelihood of being in secondary education due to the introduction of SHS. It is, however, interesting to find that the same results are observed for the older group (18-19 years old), although they should be in tertiary education—assuming that they entered the education system given the ideal age and have not dropped out nor repeated a grade in the course of their studies. This irregularity is suspected to be an indication of a lack of fidelity in compulsory schooling implementation. Still, the increase in probability suggests that the K-12 reform may have induced more young people to complete their secondary education due to the reform's promise. Moreover, the adoption of

another education reform—which expands access to tertiary education by making tuition-free in public tertiary education institutions and providing subsidies for those wanting to study in private tertiary education institutions—might have provided additional incentives to complete basic education.

Finally, while the results show an increase in the likelihood of the ‘more desirable’ outcomes (being in education), inequalities remain largely unchanged after the reform. First, disadvantaged females still have the highest predicted probabilities of being NEET. Second, disadvantaged males still tend to be working. Third, both males and females in advantageous positions are more likely to be in education. Lastly, disadvantaged males have a higher probability of being NEET after the reform. One possible reason is waning employment opportunities in rural areas, due to the declining productivity in the agriculture sector. Another possible reason is that, due to increasing costs of education, families may have prioritized the education of the girls among their members, which is suggested by previous studies. While the increase is marginal, this merits investigation and monitoring in the future, as it may lead to worsening inequalities. Even so, the period following the adoption of the reform is not associated with widened inequalities. However, given that disadvantaged groups tend to be in less desirable outcomes (i.e., not in education), this may have repercussions in their future, as hypothesized by the life course theory and evidenced by studies in other countries relating to wage and employment scarring. While this research is unable to validate this hypothesis, this leaves room for future research.

However, this research also has its limitations. One, due to data availability, static analysis has been conducted rather than a dynamic one. This means it was unable to trace the changes of outcomes of everyone in the survey, and thus, unable to understand whether these youth outcomes are transitory or long-term. This limitation in scope, however, provides space for future research. To determine the long-term effects of youth outcomes at this juncture, a longitudinal analysis needs to be conducted. For example, researchers may try to investigate whether being in ‘less desirable’ outcomes does penalize them in the future, especially when they are adults. Therefore, the government should invest in data collection that will allow researchers to conduct longitudinal studies and more in-depth mixed methods research to better understand the effects of the reform.

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## References

- Albert, J. R. G., F. Quimba, A. P. E. Ramos, and J. P. Almeda [2012] “Profile of out of school children in the Philippines”, *Philippine Institute for Development Studies, Discussion Paper Series 01*: 31.
- Alcantara, A. N [1994] “Gender roles, fertility, and the status of married Filipino men and women”, *Philippine Sociological Review* 42(1/4): 94–109. JSTOR.
- Aldaba, F. T., L. A. Lanzona, and R. J. Tamangan [2004] “An empirical analysis on the trade-off between schooling and child labor in the Philippines”, *Philippine Journal of Development; Makati City* 31(2): 215–246.
- Alipio, C. [2013] “Young men in the Philippines: mapping the costs and debts of work, marriage, and family life”, *The ANNALS of the American Academy of Political and Social Science*. <https://doi.org/10.1177/0002716212467946>.
- Bania, E. V., C. Eckhoff, and S. Kvernmo [2019] “Not engaged in education, employment or training (NEET) in an Arctic sociocultural context: the NAAHS cohort study”, *BMJ Open* 9(3): <https://doi.org/10.1136/bmjopen-2018-023705>.
- Batan, C. M. [2012] “A conceptual exploration of the Istambay phenomenon in the Philippines”, *Philippine Sociological Review* 60: 101–130. JSTOR.
- Batan, C. M. [2015] “The Istambays and transition crises: locating spaces of social sufferings”, In M. Heathfield and D. Fusco (Eds.), *Youth and inequality in education: global actions in youth work*. Routledge. <https://doi.org/10.4324/9781315750668>.
- Becker, G. S. [1962] “Investment in human capital: a theoretical analysis”, *Journal of Political Economy* 70(5): 9–49.
- Bernardi, L., J. Huinink, and R. A. Settersten [2019] “The life course cube: a tool for studying lives”, *Advances in Life Course Research* 41: 100258. <https://doi.org/10.1016/j.alcr.2018.11.004>.
- Bynner, J. and S. Parsons [2002] “Social exclusion and the transition from school to work: the case of young people not in education, employment, or training (NEET)”, *Journal of Vocational Behavior* 60(2): 289–309. <https://doi.org/10.1006/jvbe.2001.1868>.
- Camacho, A. Z. V. [1999] “Family, child labour and migration: child domestic workers in Metro Manila” *Childhood* 6(1): 57–73. <https://doi.org/10.1177/0907568299006001005>.
- Caroleo, F. E., E. Ciociano, and S. Destefanis [2017] “Youth labour-market performance, institutions and vet systems: a cross-country analysis”, *Italian Economic Journal* 3(1): 39–69. <https://doi.org/10.1007/s40797-016-0045-8>.
- David, C. C., J. R. G. Albert, and J. F. V. Vizmanos [2018] “Out-of-school children: changing landscape of school attendance and barriers to completion”, *Philippine Institute for Development Studies, Discussion Paper Series 25*: 37.
- DeGraff, D. S., R. E. Bilsborrow, and A. N. Herrin [1996] “Children’s education in the Philippines: Does high fertility matter?”, *Population Research and Policy Review* 15(3): 219–247. <https://doi.org/10.1007/BF00127050>.

- Elder, G. H. [1994] “Time, human agency, and social change: perspectives on the life course”, *Social Psychology Quarterly* 57(1): 4. <https://doi.org/10.2307/2786971>.
- Elder, G. H. [1998] “The life course as developmental theory”, *Child Development* 69(1): 1–12. JSTOR. <https://doi.org/10.2307/1132065>.
- Elder, G. H., M. K. Johnson, and R. Crosnoe [2003] “The emergence and development of life course theory”, In J. T. Mortimer and M. J. Shanahan (Eds.), *Handbook of the Life Course* 3–19. Springer US. [https://doi.org/10.1007/978-0-306-48247-2\\_1](https://doi.org/10.1007/978-0-306-48247-2_1).
- Estudillo, J., A. Quisumbing, and K. Otsuka [2001] “Gender differences in land inheritance, schooling and lifetime income: evidence from the rural Philippines”, *The Journal of Development Studies* 37(4): 23–48. <https://doi.org/10.1080/00220380412331322031>.
- Evans, K. [2007] “Concepts of bounded agency in education, work, and the personal lives of young adults”, *International Journal of Psychology* 42(2): 85–93. <https://doi.org/10.1080/00207590600991237>.
- Frostad, P., S. J. Pijl, and P. E. Mjaavatn [2015] “Losing all interest in school: social participation as a predictor of the intention to leave upper secondary school early”, *Scandinavian Journal of Educational Research* 59(1): 110–122. <https://doi.org/10.1080/00313831.2014.904420>.
- Furlong, A. [2006] “Not a very NEET solution: representing problematic labour market transitions among early school-leavers”, *Work, Employment and Society* 20(3): 553–569. <https://doi.org/10.1177/0950017006067001>.
- Gipson, J. and M. Hindin [2015] “Intergenerational Relationships between women’s fertility, aspiration for their children’s education and school completion in the Philippines”, *Journal of Biosocial Science* 47(6): 825–844. <https://doi.org/10.1017/S0021932014000510>.
- Gregg, P. and E. Tominey [2005] “The wage scar from male youth unemployment”, *Labour Economics* 12(4): 487–509. <https://doi.org/10.1016/j.labeco.2005.05.004>.
- Gronau, R. [1980] “Home production—a forgotten industry”, *The Review of Economics and Statistics*, 62(3): 408–416. JSTOR. <https://doi.org/10.2307/1927108>.
- Gropello, E. di, H. Tan, and P. Tandon [2010] *Skills for the labor market in the Philippines*. The World Bank. <http://documents.worldbank.org/curated/en/447371468107360170/Skills-for-the-labor-market-in-the-Philippines>.
- Gultiano, S. and P. Xenos [2006] “Age structure and urban migration of youth in the Philippines”, In D. I. Pool, L. R. Wong, É. Vilquin, and Comité international de coordination des recherches nationales en démographie (Eds.), *Age-structural transitions: challenges for development*. CICRED, Committee for international cooperation in national research in demography.

- Gustman, A. L. and T. L. Steinmeier [1981] “The impact of wages and unemployment on youth enrollment and labor supply”, *The Review of Economics and Statistics* 63(4): 553–560. JSTOR. <https://doi.org/10.2307/1935851>.
- Gutiérrez-García, R. A., C. Benjet, G. Borges, E. Méndez Ríos, and M. E. Medina-Mora [2018] “Emerging adults not in education, employment or training (NEET): Socio-demographic characteristics, mental health and reasons for being NEET”, *BMC Public Health* 18(1): 1201. <https://doi.org/10.1186/s12889-018-6103-4>.
- Harmon, C., H. Oosterbeek, and I. Walker [2003] “The returns to education: microeconomics”, *Journal of Economic Surveys* 17(2): 115–156. <https://doi.org/10.1111/1467-6419.00191>.
- Hart, C. S. [2016] “How do aspirations matter?”, *Journal of Human Development and Capabilities* 17(3): 324–341. <https://doi.org/10.1080/19452829.2016.1199540>.
- Hart, C. S., and A. Sriprakash [2017] “International perspectives on social inequalities, excellence and aspiration in education”, *International Studies in Sociology of Education* 26(3): 229–230. <https://doi.org/10.1080/09620214.2017.1359227>.
- Hart, D. V. [1971] “Philippine rural-urban migration: a view from Caticuan, a Bisayan village”, *Behavior Science Notes* 6(2): 103–137. <https://doi.org/10.1177/106939717100600203>.
- Heissler, K. [2011] “‘We Are poor people so what is the use of education?’ Tensions and contradictions in girls’ and boys’ transitions from school to work in rural Bangladesh”, *The European Journal of Development Research* 23(5): 729–744. <https://doi.org/10.1057/ejdr.2011.40>.
- Hendershot, G. [1971] “Cityward migration and urban fertility in the Philippines”, *Philippine Sociological Review* 19(3/4): 183–192. JSTOR.
- Juárez, F. W. C. [2015] “Intergenerational transmission of education: the relative importance of transmission channels”, *Latin American Economic Review* 24(1): 1–44. <https://doi.org/10.1007/s40503-014-0015-1>.
- Kaut, C. [1961] “Utang na loob: a system of contractual obligation among Tagalogs”, *Southwestern Journal of Anthropology* 17(3): 256–272. JSTOR.
- Khoo, S.-E., P. C. Smith, and J. T. Fawcett [1984] “Migration of women to cities: the Asian situation in comparative perspective”, *The International Migration Review* 18(4): 1247–1263. JSTOR. <https://doi.org/10.2307/2546081>.
- Krahn, H. and A. Chow [2016] “Youth unemployment and career scarring: social-psychological mediating effects?” *Canadian Journal of Sociology (Online); Toronto* 41(2): 117–137.
- Levison, D., K. S. Moe, and F. Marie Knaul [2001] “Youth education and work in Mexico”, *World Development* 29(1): 167–188. [https://doi.org/10.1016/S0305-750X\(00\)00090-5](https://doi.org/10.1016/S0305-750X(00)00090-5).

- Lewis, T., J. Stone, W. Shipley, and S. Madzar [1998] “The transition from school to work: an examination of the literature”, *Youth & Society* 29(3): 259–292. <https://doi.org/10.1177/0044118X98029003001>.
- Ling, T. J. and K. M. O’Brien [2013] “Connecting the forgotten half: the school-to-work transition of noncollege-bound youth”, *Journal of Career Development* 40(4): 347–367. <https://doi.org/10.1177/0894845312455506>.
- Lockwood, B. [1991] “Information externalities in the labour market and the duration of unemployment”, *The Review of Economic Studies* 58(4): 733–753. <https://doi.org/10.2307/2297830>.
- Maguire, S. [2015] “NEET, unemployed, inactive or unknown—why does it matter?”, *Educational Research* 57(2): 121–132. <https://doi.org/10.1080/00131881.2015.1030850>.
- Manacorda, M., F. C. Rosati, M. Ranzani, and G. Dachille [2017] “Pathways from school to work in the developing world”, *IZA Journal of Labor & Development* 6(1): 1. <https://doi.org/10.1186/s40175-016-0067-5>.
- Marcelino, E. P. [1990] “Towards understanding the psychology of the Filipino”, *Women & Therapy*, 9(1–2): 105–128. [https://doi.org/10.1300/J015v09n01\\_07](https://doi.org/10.1300/J015v09n01_07).
- McBride, A., G. Hebson, and J. Holgate [2015] “Intersectionality: are we taking enough notice in the field of work and employment relations?”, *Work, Employment and Society* 29(2): 331–341. <https://doi.org/10.1177/0950017014538337>.
- McKay, D. [2005] “Reading remittance landscapes: female migration and agricultural transition in the Philippines”, *Geografisk Tidsskrift-Danish Journal of Geography* 105(1): 89–99. <https://doi.org/10.1080/00167223.2005.10649529>.
- Mincer, J. [1958] “Investment in human capital and personal income distribution”, *Journal of Political Economy* 66(4): 281–302. JSTOR.
- Modell, J., F. F. Furstenberg, and T. Hershberg [1976] “social change and transitions to adulthood in historical perspective”, *Journal of Family History* 1(1): 7–32. <https://doi.org/10.1177/036319907600100103>.
- Momo, M. S. M., S. J. Cabus, K. D. Witte, and W. Groot [2019] “A systematic review of the literature on the causes of early school leaving in Africa and Asia”, *Review of Education* 7(3): 496–522. <https://doi.org/10.1002/rev3.3134>.
- Naafs, S. [2013] “Youth, gender, and the workplace: shifting opportunities and aspirations in an Indonesian industrial town”, *The ANNALS of the American Academy of Political and Social Science* 646(1): 233–250. <https://doi.org/10.1177/0002716212469927>.
- Naafs, S., and T. Skelton [2018] “Youthful futures? Aspirations, education and employment in Asia”, *Children’s Geographies* 16(1): 1–14. <https://doi.org/10.1080/14733285.2018.1402164>.
- Neugarten, B. L. and N. Danan [1973] “Sociological perspectives on the life cycle”, In *Life-Span Developmental Psychology* 53–69. Elsevier. <https://doi.org/10.1016/B978-0-12-077150-9.50009-5>.

- Orbeta, A. C. [2002] "Education, labor market, and development: a review of the trends and issues in the Philippines for the past 25 years", *Philippine Institute for Development Studies, PIDS Discussion Paper Series* 2002-19: 98.
- Paqueo, V. B. and A. C. (Jr.) Orbeta [2019] "Gender equity in education: helping the boys catch up", *Philippine Institute for Development Studies* 16.
- Pomeroy, R. S. [1987] "The role of women and children in small scale fishing households: a case study in Matalom, Leyte, Philippines", *Philippine Quarterly of Culture and Society* 15(4): 353–360. JSTOR.
- Psacharopoulos, G. and H. A. Patrinos [2004] "Returns to investment in education: a further update", *Education Economics* 12(2): 111–134. <https://doi.org/10.1080/0964529042000239140>.
- Quisumbing, A. R., S. McNiven [2005] "Migration and the rural-urban continuum: evidence from the rural Philippines", *International Food Policy Research Institute, Discussion Paper* 197: 62. <https://doi.org/10.22004/ag.econ.59599>.
- Reyes, J. [2015] "Loób and kapwa: an introduction to a Filipino virtue ethics", *Asian Philosophy*, 25(2): 148–171. <https://doi.org/10.1080/09552367.2015.1043173>.
- Sakellariou, C. and A. Lall [2000] "Child labour in the Philippines: determinants and effects", *Asian Economic Journal* 14(3): 233–253. <https://doi.org/10.1111/1467-8381.00110>.
- Skelton, T. [2012] "Geographies of children, young people and families in Asia", *Children's Geographies* 10(4): 473–479. <https://doi.org/10.1080/14733285.2012.726408>.
- Thurlby-Campbell, I. and L. Bell [2015] *Agency, structure and the NEET policy problem: the experiences of young people*. Bloomsbury Academic. <https://doi.org/10.5040/9781474274203>.
- Torres, A. T. [1982] "Decisions, aspirations and media preferences of rural out-of-school youth", *Philippine Journal of Psychology* 15–16: 28–55.
- Trager, L. [1984] "Family strategies and the migration of women: migrants to Dagupan City, Philippines", *The International Migration Review* 18(4): 1264–1277. JSTOR. <https://doi.org/10.2307/2546082>.
- Tuason, Ma. T. G. [2008] "Those who were born poor: A qualitative study of Philippine poverty", *Journal of Counseling Psychology* 55(2): 158–171. <https://doi.org/10.1037/0022-0167.55.2.158>.
- Urich, P. B. and S. A. Gultiano [2005] "The 'youth bulge' and agriculture in the Philippines", In S. Tuljapurkar, I. Pool, and V. Prachuabmoh (Eds.), *Population, resources and development: riding the age waves* 203–219. Springer Netherlands. [https://doi.org/10.1007/1-4020-3464-4\\_11](https://doi.org/10.1007/1-4020-3464-4_11).
- Yeung, W.-J. J. and C. Alipio [2013] "Introduction: transitioning to adulthood in Asia: school, work, and family life", *Annals of the American Academy of Political and Social Science* 646: 6–27. JSTOR.
- Zuccotti, C. V. and J. O'Reilly [2019] "Ethnicity, gender and household effects on becoming NEET: an intersectional analysis", *Work, Employment and Society* 33(3): 351–373. <https://doi.org/10.1177/0950017017738945>.

## Appendix

**TABLE A.1 Results from the multinomial regression model for 16-17 years of age**  
(odds ratios, weighted; reference category = “In Secondary Education”)

Variables	Outcomes (16-17 yrs old)		
	NEET	Employed	In Tertiary
<b>Reform effect</b>			
postreform1=0 (ref.)			
postreform1=1	5.238***	3.561***	6.295***
<b>Sex</b>			
male (ref.)			
female	0.809***	0.270***	0.590***
<b>Location</b>			
rural (ref.)			
urban	0.968	0.421***	0.738***
<b>Highest level reached by Household Head</b>			
no education (ref.)			
primary	0.590***	0.404***	0.579***
secondary	0.290***	0.130***	0.291***
tertiary	0.0961***	0.0585***	0.160***
<b>Civil Status</b>			
single (ref.)			
married	2.300***	5.131***	0.689
<b>Household Size</b>			
	1.123***	1.137***	1.105***
<b>Reform effect * Sex</b>			
Post-reform and Female == 1	0.848*	0.649***	1.421***
<b>Reform effect * Location</b>			
Post-reform and Urban == 1	1.038	1.509***	1.048
<b>Reform effect * HH head education</b>			
no education (ref.)			
primary	0.475*	0.577	1.099
secondary	0.400*	0.514	1.570
tertiary	0.473	0.356**	2.062*
<b>Location * Sex</b>			
Urban and Female == 1	0.883*	2.197***	1.061
<b>Civil Status * Sex</b>			
Married and Female == 1	15.66***	2.074**	1.444
Observations	82,741	82,741	82,741

Notes:

1. Level of significance: \* p<0.05 \*\* p<0.01 \*\*\* p<0.001
2. Coefficients on the regional variables not shown here.

**TABLE A.2 Results from the multinomial regression model for 18-19 years of age**  
(odds ratios, weighted; reference category = “In Tertiary Education”)

Variables	Outcomes (18-19 yrs old)		
	NEET	Employed	In Secondary
<b>Reform effect</b>			
postreform2=0 (ref.)			
postreform2=1	1.237	0.849	2.552***
<b>Sex</b>			
male (ref.)			
female	0.886**	0.297***	0.452***
<b>Location</b>			
rural (ref.)			

**TABLE A.2 Results from the multinomial regression model for 18-19 years of age (continued)**  
(odds ratios, weighted; reference category = “In Tertiary Education”)

Variables	Outcomes (18-19 yrs old)		
	NEET	Employed	In Secondary
urban	1.083*	0.563***	0.680***
<b>Highest level reached by Household Head</b>			
no education (ref.)			
primary	0.652***	0.463***	0.679***
secondary	0.354***	0.183***	0.349***
tertiary	0.130***	0.0742***	0.141***
<b>Civil Status</b>			
single (ref.)			
married	4.409***	12.48***	1.401
<b>Household Size</b>			
	1.090***	1.080***	1.095***
<b>Reform effect * Sex</b>			
Post-reform and Female == 1	0.829*	0.748***	1.263***
<b>Reform effect * Location</b>			
Post-reform and Urban == 1	0.990	1.166	1.451***
<b>Reform effect * HH head education</b>			
no education (ref.)			
primary	0.657	0.714	0.819
secondary	0.703	0.779	0.960
tertiary	0.791	0.712	1.235
<b>Location * Sex</b>			
Urban and Female == 1	0.833***	2.234***	1.196**
<b>Civil Status * Sex</b>			
Married and Female == 1	7.421***	0.599***	1.103
Observations	77,630	77,630	77,630

Notes:

1. Level of significance: \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

2. Coefficients on the regional variables not shown here