

Health and Gender Inequality

Case Studies: Peru, Indonesia, and the Philippines

Client¹

Asian-Pacific Economic Cooperation (APEC)

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1. Introduction

Gender inequality, like other social problems, is both unfair and economically inefficient. Thus, finding suitable solutions to this problem should be a priority in policy making even from a strictly economic perspective. We believe that a rigorous analysis of the roots of the problem could make valuable contributions to understanding its policy implications. We view gender inequality from the perspective of constraints on economic agents' ability to access resources and make decisions that maximize their productivity and quality of life. Women have not had, and often still do not have, the same opportunity to access resources as men in most societies. Compounding resource inequality, gender discrimination has limited their ability to make effective decisions—their economic agency—and achieve economic well-being.

We are interested in understanding the factors that generate a person's "initial agency" — the ability for them to make "rational" choices once they are no longer under the supervision of parents or guardians. With that in mind, initial agency is a function of factors that pertain to a person's family and upbringing such as financial well-being, health, standard of living, etc. We view initial agency as the first value in a chain of future parameters that measure a person's ability to make choices. The more and better choices a person is able to make initially will predispose them to the opportunity to make more and better choices in the future.

APEC's Policy Partnership on Women and the Economy (PPWE) broadly defines five "pillars" describing areas in which gender discrimination may constrain women's agency. These five pillars are: 1) access to capital and assets; 2) access to markets; 3) skills, capacity-building, and health; 4) leadership, voice, and agency; 5) innovation and technology. In our analysis, we explore agency as defined by the third pillar: skills, capacity building, and health. While APEC is concerned with the agency of women at all ages, we specifically look at the foundations of women's agency formed at an early age (15-20 years old). Health is therefore an important element of initial agency. Data on life expectancy, morbidity, use of health services and risk of mortality reveal relevant differences between men and women. In this report, we analyze the association between measures of agency and health and family factors for young women in Peru, Indonesia, and the Philippines. In particular, we seek to determine the factors that lead to greater health and thus access to better opportunities later in life.

To conduct the empirical analysis, we take several factors into consideration. First, we analyze micro data to understand the mechanisms that shape gender inequality at the individual level. Second, we study a sample of only young women, that is, women who are between 15 and 20 years old. The main rationale for this is to isolate the origins of agency, that is, family and environmental determinants that enable young women to gain different forms of agency. This also helps to solve the endogeneity problem that is more difficult to solve in studying mature women, that is, that agency affects an individual's environment and vice versa, making it difficult to isolate causal effects. Third, we examine several economies in parallel to see how these mechanisms vary across the region. Finally, we study different forms of agency and even try to identify differences between young men and women, to see to how inequalities are shaped by early determinants.

In the second section of the report we conduct a literature review to assess the broader topic of gender equality and its consequences. We then briefly summarize the history of gender roles in our economies of interest in our third section. The fourth section explains our methodology and a description of the Development and Health Survey (DHS) which we used to conduct our analysis. In section five we develop an empirical analysis of the association of individual health outcomes

and family factors with several outcomes which we define to represent “agency.” Finally, in section six we summarize our findings and present areas for further research.

2. Literature Review

In this brief review of the relevant literature, we pay particular attention to tangible economic outcomes and the individual factors that lead to better outcomes. We are especially interested in how various dimensions of initial agency, as achieved early in a woman's life, affect their economic well-being later in life. We want to accelerate the improvement of life for women by examining the possibility of targeted policies specifically enacted to curb gender inequality. There is optimism that the course of economic development might promote this naturally. Countries that shift away from heavy industry or "brawn-based" industries in favor of service sectors might find that they are specializing in services where women have a comparative advantage. Trade liberalization might serve to speed up this process, though the effect is exceedingly ambiguous.

We define agency broadly as the ability to make decisions for oneself that help reach desired outcomes. The more choices available, and the greater the quality of those choices, the better the outcomes will be. Field, Martinez, and Pande (2016) demonstrate that women with greater access to capital are more likely to participate in the labor force. In 1999, the Indian Shri Mahil Self Employment Women Association Sahkari (SEWA) Bank began a massive expansion of services in the city of Ahmedabad, hiring additional officers to bring on new clients. By surveying women and using the distance from the nearest loan officer as a proxy for access to capital, Field et al find there is a positive relationship between access to capital and labor force participation, largely through household enterprises.

Another microfinance study (Berhardt et al 2019) examined an apparent gender gap in the returns to microfinance, with women generating much lower returns than men in response to capital shocks. The authors find the difference stems from women being more likely to live with other enterprise owners while being more likely to invest in a household enterprise that is not their own. Microloans extended to women generate just as high returns at the household level; when they are the sole enterprise owner in the household, women's businesses also enjoy higher profits.

While Field, Martinez, and Pande fail to find a connection between microfinance and long-term empowerment, other studies show positive relationships. Heath and Jayachandran (2017), in their review of female education and labor force participation, point to the positive effects of business training. Such training often goes hand in hand with microfinance, and not only does it build crucial skills, it establishes social networks that participants might have previously lacked.

Alongside access to capital, education is another important contributor to agency. Increased education in women seemingly delays fertility and, in some places, lowers lifetime fertility. Part of it stems from the higher opportunity cost of having a child compared to joining the workforce, but the trend even happens when the benefits of working are slim.² Education also makes it easier for women to assess their desired number of children, and it improves the effective usage of contraception.³

We are concentrating on young adults and familial factors because the foundation of agency begins early. Path-dependency runs through life: the choices made early on open up some

² Rachel Heath and Seema Jayachandran, "The Causes and Consequences of Increased Female Education and Labor Force Participation in Developing Countries," in *The Oxford Handbook Of Women And The Economy*, ed. Susan L. Averette, Laura M. Argys, and Saul D. Hoffman (Oxford Handbooks Online, 2017), p. 12

³ *Ibid*, p. 13

opportunities and eliminate others. That is why we are primarily focusing on women age 15 to 20. It is a solution to the econometric problem of endogeneity. Because choices build on themselves, traits can interact with each other. We might choose to assume that employment leads to better health, but it could just as easily be that better health makes it easier to find employment. By largely limiting our analysis to young adults, we can in some way compensate for that problem. 15 to 20 is an age where children start to become independent and can make their own decisions. It helps that gender equality is something that is passed down. Improvement in a mother's education has a negative relation with child mortality, and improvement in a mother's income increases the education her children receive.⁴ In contrast, increasing male income decreases the education of girls, suggesting that mothers can be critical to advancing empowerment.⁵

In addition to family life, and how it impacts the empowerment of young women, we are paying particular attention to children's health sets them up for success. This is our primary concern: a healthier life sets woman up for success which they can build upon later in life. According to Bloom, Kuhn & Prettnner (2015) there are multiple channels through which healthier women can have access to more opportunities and in so, contribute to fostering economic development: (1) healthier women can have higher returns to education, (2) healthier women are able to be part of the workforce in a more productive way, (3) healthier women are able to breastfeed and nourish their children in better ways and (4) healthier women can lower fertility and thus youth dependency, which often negatively impacts their participation in the workforce (Bloom et al., 2009).

Empirical research on this area comprises the use of different methodologies. For example, in their work, Bloom, Kuhn and Prettnner (2015), analyze the effects of investing in women's health in developing countries. Their research introduces a micro-founded dynamic general equilibrium model with endogenous consumption, education, and fertility. In this model, they present the parents' tradeoff between the number of children and their education. This allows for health-related gender differences in productivity. The results suggest that female health is more conducive to economic development.

Evidence also shows that women's health can influence school attainment. Field, Robles and & Torero (2009) conducted a regression analysis in which the outcome was years of completed schooling. The findings show that pregnant women that were given a proper iodine treatment are associated with 0.347 years of additional schooling for their children relative to the subjects that were not treated. When the authors run the regressions by gender, the effect is even larger and remains significant. In fact, it increases the average additional time of school attainment of girls to 0.594 years.

In addition to the determinants of agency that we have discussed, it is important to highlight that there are some legal and socio- environmental factors that can impact women's empowerment and therefore, their ability to achieve life-long outcomes. In fact, these factors can limit women's capacity development even if they have been provided with the tools they need during childhood and adolescence. Some of these constraints are listed in Table 1.

There is also some literature on how policymakers should think about closing the gender gap from the public health perspective. In their policy brief, Payne, S., & World Health Organization (2009) highlight that 'gender blind' systems may be detrimental for economic development as they would reinforce the existing inequalities.

⁴ Heath and Jayachandran, p. 12

⁵ Ibid, p. 16

Table 1. Legal and Social Factors that can Impact Agency

| Indicator | Peru | Indonesia | Philippines |
|---|-------------|------------------|--------------------|
| A woman can be head of household in the same way as a man | Yes | No | Yes |
| Female and male surviving spouses have equal rights to inherit assets | Yes | No | Yes |
| Sons and daughters have equal rights to inherit assets from their parents | Yes | No | Yes |
| The law grants spouses equal administrative authority over assets during marriage | Yes | Yes | No |
| Men and married women have equal ownership rights to immovable property | Yes | Yes | No |
| A woman can register a business in the same way as a man | Yes | Yes | Yes |

Source: World Bank - Databank (2020)

3. APEC Economies Analyzed

Our efforts here represent a pilot study and we chose the Philippines, Peru, and Indonesia as a selection of APEC members that we believed to be diverse and representative. Each has unique histories and circumstances. In order to better understand the underlying institutions that define womanhood in each country, we present brief histories for our three countries, as well as snapshots of current attitudes toward women.

Indonesia

In 1998, Indonesia underwent a political transformation, prompted by the Asian financial crisis. Following World War II and independence from the Netherlands, the country had a succession of authoritarian leaders who enforced rigid social codes while trying to balance power between communist, nationalist, and Muslim movements. These programs had the tendency to narrowly define the role of women. With economic collapse came Reformasi and new cultural mores. Since then, politics in Indonesia have been relatively stable.

During this time, the status of women has increased. Figure 1 shows that Indonesian women are outperforming their male peers in both secondary and tertiary enrolment indices, however, their adjusted net enrolment in primary education indicates a downward trend since 2014 in comparison to their male peers. Also, Figure 2 illustrates that educational attainment of women at primary, secondary, and tertiary levels has improved in Indonesia,⁶ and the median age of first

⁶ World Bank DataBank, 2020

marriage has increased too. But marriage is not necessarily safe for Indonesian women. The median age of marriage is still lower than other Southeast Asian countries, with significant gender disparities. In a 1998 survey, 27% of female participants were married at 15 years or younger, while only 2.8% of males were.⁷ Indonesia allows for polygamy, and women cannot be heads of households, nor do they have equal rights to inherit from a spouse or parent. The law does grant women equal administrative authority over assets during marriage, men and married women have equal ownership rights to immovable property, and a woman can register a business.⁸

Figure 1: Enrollment Metrics for Indonesia

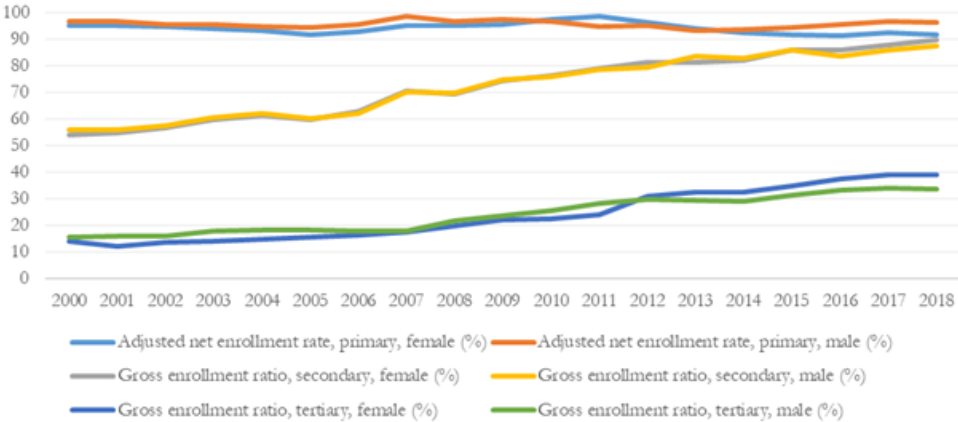
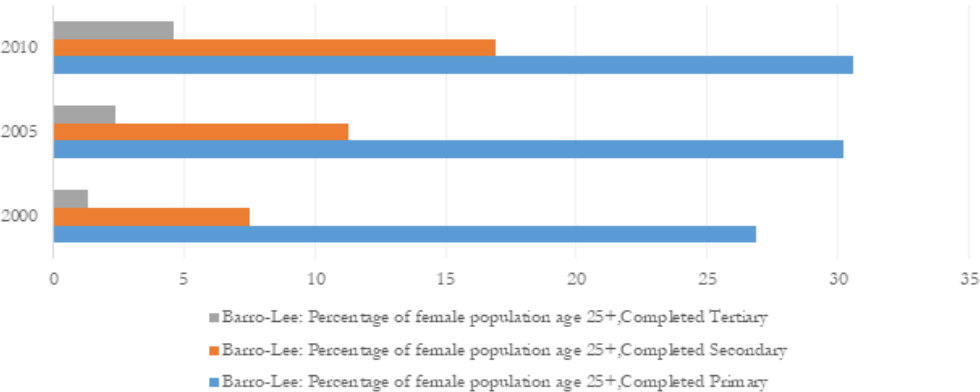


Figure 2: Educational Attainment, Indonesia



Peru

For centuries, patriarchy was a cornerstone of Peruvian society. Even after Peru won independence from Spain in the early 1800s, years of authoritarian politics deprived women of

⁷ Jacobowski, p. 91
⁸ World Bank DataBank 2020

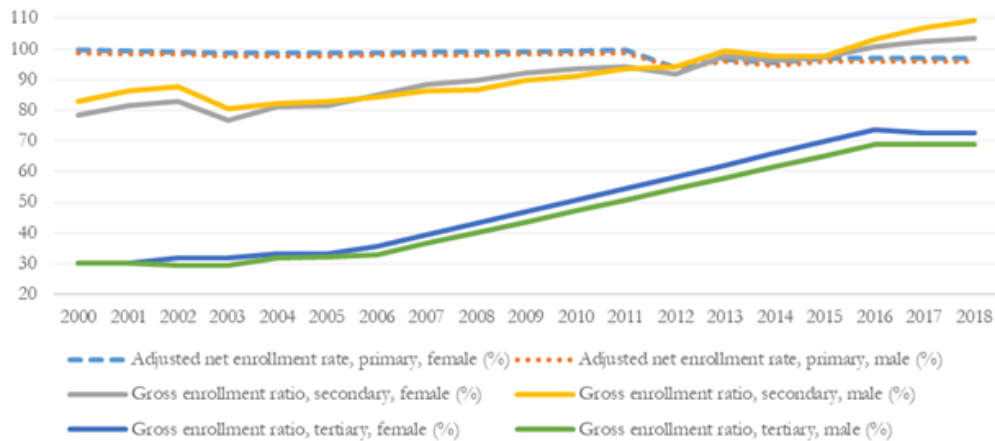
their basic human rights. Most recently, this included a campaign of forced sterilization of the indigenous population of Peru in the late 1990s.⁹

Concurrent with that program were signs of progress. For example, in the late 1990’s an amendment to the Peruvian Law gave women from indigenous and rural communities access to financial services and the right to own assets. This huge step increased female participation in the workforce by 15%,¹⁰ though figure 5 shows this gap has remained relatively steady since 2015.¹¹

Peruvian women are now more integrated in the labor force, according to Muller and Paz (2018). However, they often tend to earn lower salaries, an average of 15% less than men, and their participation in politics is still below the Latin American average. To that fact, we add that around 70% of female workers in rural areas work in the informal economy,¹² which makes it difficult to scale up enterprises or access government benefits such as healthcare or pensions.

Also, as Figure 3 shows Peruvian women are outperforming their male peers in adjusted net rate of enrollment in primary education and gross ratio of enrollment in tertiary education for almost two decades, and their attainment metrics have also improved drastically since the 2000s as shown in Figure 4.¹³ In comparison to Indonesia and Philippines the legal barriers are much lower for women in Peru. Women can be the head of household and register businesses; they have equal administrative authority during marriage and can independently obtain a judgment of divorce. Female spouses have equal rights to inherit assets, sons, and daughters both have equal rights to inherit parental assets.¹⁴

Figure 3: Enrollment Metrics for Peru



⁹ Del Aguila, E. V. “Invisible women: Forced sterilization, reproductive rights, and structural inequalities in Peru of Fujimori and Toledo.” *Estudios e pesquisas em psicologia*, 6(1) (2006): 109-124

¹⁰ Council on Foreign Relations. “Peru’s legal reforms effectively increased female labor force participation.” (2019).

¹¹ World Bank DataBank 2020

¹² Muller, M., & Paz, C. D. *Gender Gaps in Peru: An Overview*. World Bank (2018).

¹³ World Bank DataBank 2020

¹⁴ Ibid

Figure 4: Educational Attainment, Peru

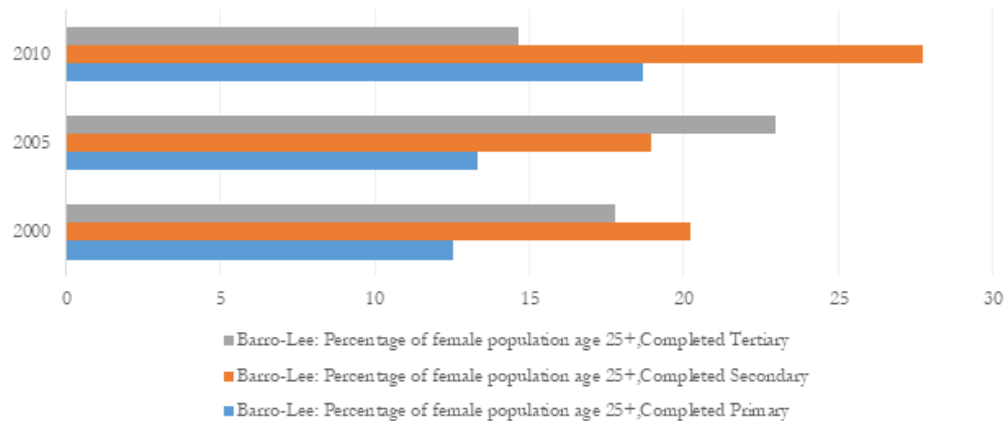
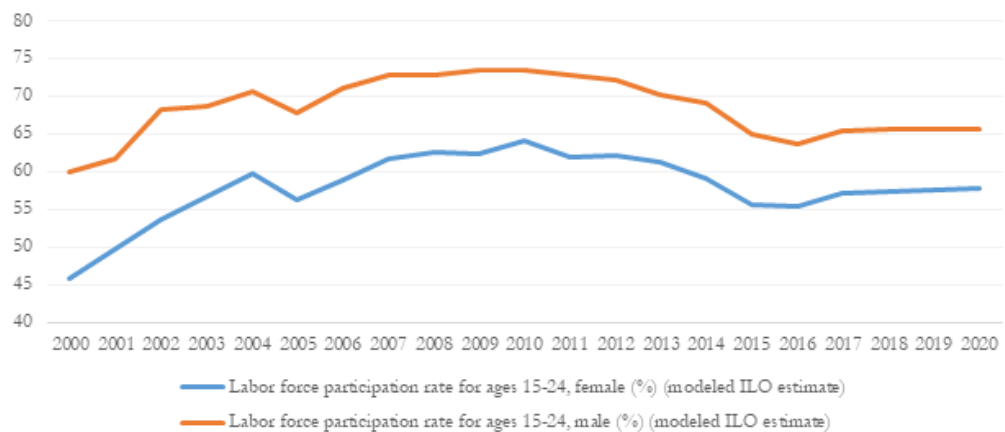


Figure 5: Labor force participation rate by sex, Peru



The Philippines

In the Philippines, gender inequality does not seem to be as considerable as the other Southeast Asian countries and this has been highlighted in the Global Gender Gap reports published by the World Economic Forum. In the most recent report published by the Forum the country is amongst the top 10 best performers in the world with 79% of its overall gender gap closed, however, for the first time since 2006 the country has reopened gaps in health and survival measures (WEF, 2017). This performance could be partially explained by the long history of politicking of Filipino women for their rights which has also gained international recognition for its leaders.

Filipino women won the right to vote in 1937 and the right to run for elections in 1946, a comprehensive legal framework to address the issues of violence against women, discrimination in the work place, sexual harassment, and trafficking has been implemented in order to ensure women are development partners (Iwanga, 2008). However, women’s movement in Philippines

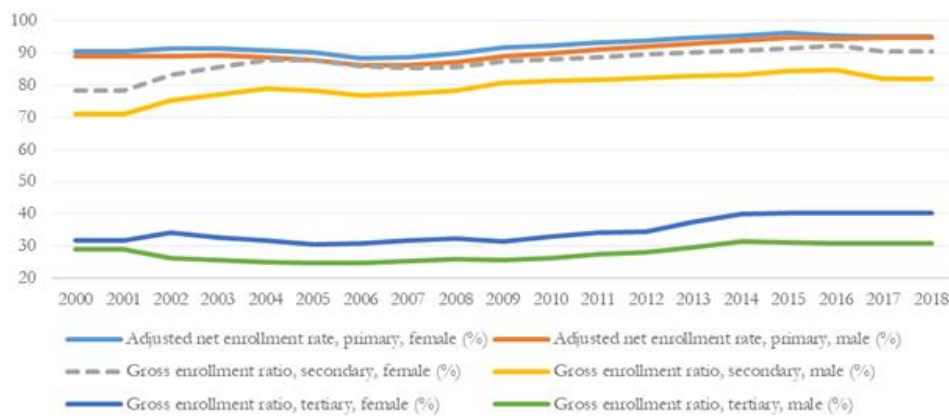
toward an egalitarian playing field still struggle with strong resistance from the Roman Catholic Church when it comes to nontrivial policy issues including divorce, same-sex marriage, and abortion (Mendoza, 2013).¹⁵

However, the women trapped in poverty haven't benefited much from the empowerment initiatives, for instance, findings of the Center for Women's Resources (CWR) shows a rise in the unemployment of women in 2001 and indicates that only 48 percent of women are employed in the formal sector of the economy. Moreover, the surge of globalization and the promotion of the Philippines as a cheap labor destination has increased the exploitation of women in many export processing zones (EPZs) as they are preferred to male workers and make up to 85 percent of the total labor. Figure 8 shows that within the 15-24 age group on average women have 20 percent lower participation in the labor force than their male peers (World Bank DataBank, 2020), perhaps because these women are more likely to be still attending school.

Education has been one of the main areas that Filipino women have excelled, the literacy rate among adult female is 98.2 percent which is 0.1 percent higher than adult male, also, they have performed better in gross enrolment ratios of secondary and tertiary education than their male peers within the same age group, however, among the educational attainment metrics only the secondary education has improved in the 2000s (World Bank DataBank, 2020).

Also, legal framework inequalities still exist for Filipino women as they cannot obtain a judgment of divorce similar to men, the law doesn't grant spouses equal administrative authority over assets during the marriage, and men and married women don't have equal ownership rights to immovable property. However, Filipino women can be heads of households similar to men, surviving spouses have equal rights to inherit assets, sons and daughters have equal rights to inherit assets from their parents, and they can register a business in the same way as men.

Figure 6: Enrollment Metrics for Philippines



¹⁵ Mendoza, D. J. *Engaging the state, challenging the church: the women's movement and policy reforms in the Philippines.* (2013).

Figure 7: Educational Attainment, Philippines

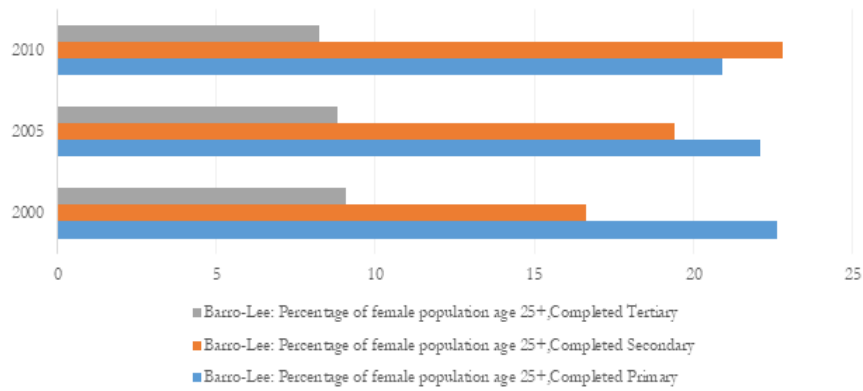


Figure 8: Labor force participation rate by sex, Philippines

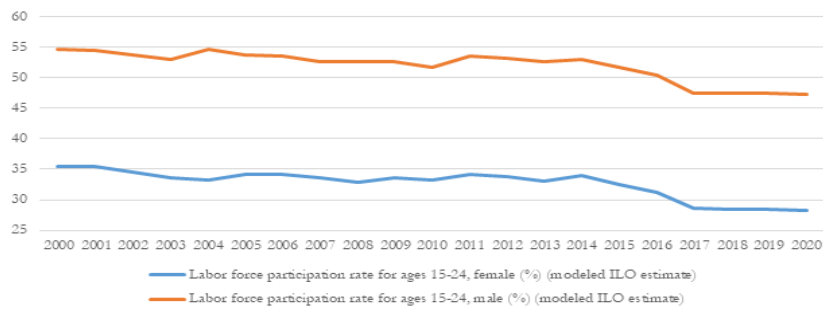


Figure 9 depicts the percentage of graduates from Science, Technology, Engineering and Mathematics (STEM) programmes in tertiary education by sex in 2017, in Peru and Indonesia, women are outperforming men in this metric, however, in rgw Philippines the gap still exists.

Figure 9: Percentage of graduates from Science, Technology, Engineering and Mathematics programmes in tertiary education by sex, 2017

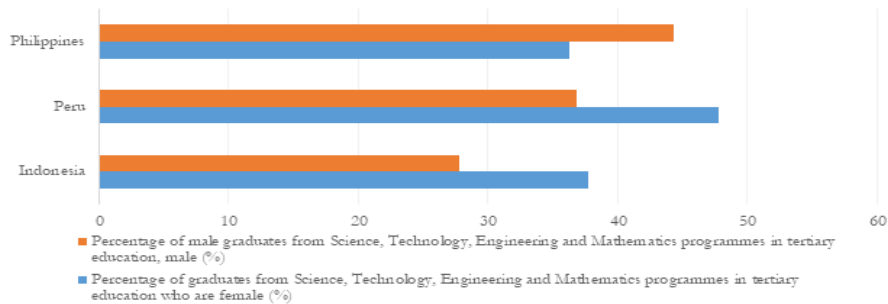
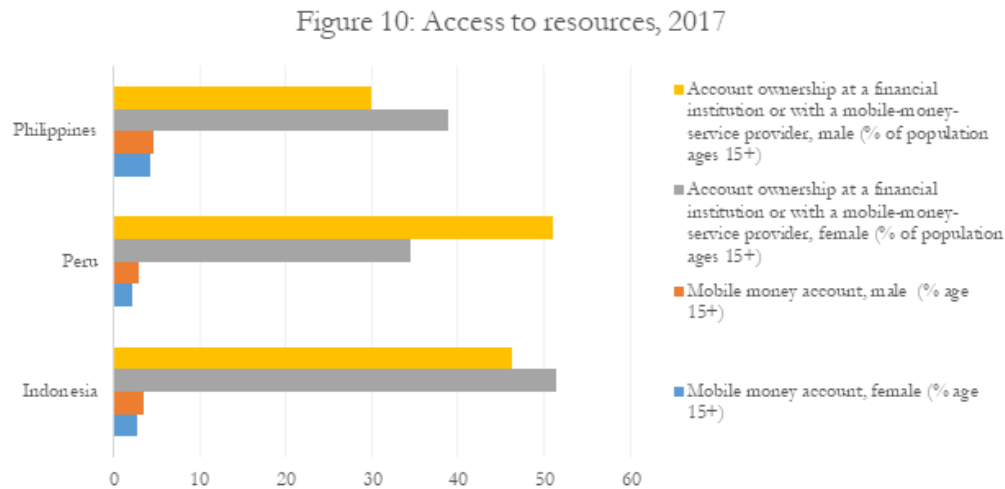


Figure 10 illustrates access to resources in 2017 among the studied countries, it shows that women are performing better than men in the Philippines and Indonesia in account ownership at a financial institution or with a mobile-money-service provider metric, the opposite is correct for Peru, however. On the other hand, mobile money accounts are more prevalent among men in all three countries.¹⁶



4. Methodology and Data

Methodology

This study examines three different dimensions of initial agency among young women. Our empirical analysis is divided into three parts. In the first one, based on the work of Artazcoz, Borrell and Benach (2001)¹⁷, we estimate a set of logit regressions to determine how family and regional factors impact *physical agency*. The dependent variables studied in this dimension are height, early pregnancy and fertility control (access and knowledge of contraception). In the second part, we estimate an Ordinary Least Squares (OLS) model to explain how those factors impact *cognitive agency*, which in this case is measured as the young woman's years of education. Finally, the third section we estimate a set of logit regressions to analyze the determinants of *economic agency*. This time, the economic agency is represented by the ownership of private means of transportation, that is, if the young woman owns a car or a motorcycle. In all three sections, we assess how the relations between the variables of interest has changed across time. For that, we estimate the same regressions both for 2007-2008 and 2012-2013. All tables presented in the results are prepared using the R function Stargazer developed by Hlavac (2018)¹⁸.

¹⁶ World Bank DataBank, 2017

¹⁷ Artazcoz, L., Borrell, C., & Benach, J. "Gender inequalities in health among workers: the relation with family demands." *Journal of Epidemiology & Community Health*, 55(9) (2001): 639-647.

¹⁸ Hlavac, M. (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables. R package version 5.2.2. <https://CRAN.R-project.org/package=stargazer>

Data

We use datasets from the USAID Demographic and Health Surveys (DHS). DHS data is desirable because questions and years conducted are standardized across all economies that participate in the survey program and it has a track record of being legitimate and useful for academic research projects¹⁹. The DHS surveys record information about several distinct categories including, but not limited to, population, housing, respondent characteristics, fertility, nutrition, women's empowerment, and domestic violence.

For our analysis we collect data from Peru, Indonesia, and the Philippines in two different periods, 2007-2008 and 2012-2013. In particular, this experiment looks at women and men who are between 15 and 20 years old at the time of the survey. This approach would allow us to (1) explain some economic outcomes primarily as a function of a person's upbringing and (2) compare the obtained results across time.

Definitions of Variables Used in the Analysis

To assess our general hypothesis, we have selected variables included in the DHS that act as proxies for the "five pillars" of APEC gender inequality policies. The variable set includes the following:

a) Dependent (Economic outcomes and representations of agency)

- Years of Education: Numerical (In years)
- Early pregnancy: Dummy (0=No, 1=Yes)
- Ownership of assets - Car or Truck: Dummy (0=No, 1=Yes)
- Ownership of assets - Motorcycle: Dummy (0=No, 1=Yes)
- Height: Numerical (In centimeters)
- Access to contraception: Dummy (0=No, 1=Yes)
- Knowledge of contraception: Dummy (0=No, 1=Yes)
- Access to the job market: Dummy (0=No, 1=Yes)
- Female works for herself: Dummy (0=No, 1=Yes)

b) Independent (Family and regional factors)

- Household Wealth: Categorical (Five quintiles from poorest (1) to richest (5))
 - Poorest - 1 (Base case)
 - Poorer - 2 (0=Poorest, 1=Poorer)
 - Middle - 3 (0=Poorest, 1=Middle)
 - Richer - 4 (0=Poorest, 1=Richer)
 - Richest- 5 (0=Poorest, 1=Richest)
- Sex of Household Head: Dummy (0 = Male, 1=Female)
- Household access to electricity: Dummy (0= No, 1= Yes)
- Household is communicated (has telephone): Dummy (0= No, 1= Yes)
- Household is in the financial sector (has bank account): Dummy (0= No, 1= Yes)
- Household location: Dummy (0= Urban, 1= Rural)

¹⁹ Fabric, M. S., Choi, Y., & Bird, S. "A systematic review of Demographic and Health Surveys: data availability and utilization for research." *Bulletin of the World Health Organization*, 90 (2012): 604-612.

5. Results

Through our analysis, we hope to demonstrate the relationships that exist between women’s agency (physical, cognitive, and economic) and the household and regional factors that we believe are the starting point of these forms of agency. Based on the fundamentals highlighted in the literature review, we are expecting the regressors to impact the dependent variables in the directions shown in Table 2.

Table 2. Expected Signs of the Explanatory Variables

| Dependent Variables/Regressors | Household Wealth | Sex of Household Head | Has Electricity | Has Bank Account | Location |
|--------------------------------|------------------|-----------------------|-----------------|------------------|----------|
| Years of Education | P | P/N | P | P | N |
| Early Pregnancy | N | P/N | N | N | P |
| Can Access Contraception | P | P/N | P | P | N |
| Knows of Contraception | P | P/N | P | P | N |
| Height | P | P/N | P | P | N |
| Owens a Car or Truck | P | P/N | P | P | N |
| Owens a Motorcycle | P | P/N | P | P | N |

Legend: P = Positive, N= Negative

a) *Determinants of health (physical agency)*

A core part of our hypothesis lies on the fact that healthier women can be more productive. Most of that is the result of the individual’s upbringing and the availability of healthcare resources. Height is a common indicator of health for several reasons. As argued by Deaton(2007)²⁰, taller individuals can have better income because they are physically more capable of engaging in certain activities or simply because height is an indicator of cognitive potential. If an individual does not reach their full genetic height, then they may not complete their cognitive development either.

Other researchers believe that an individual’s height can provide a lot of information about children’s nutrition, exposure to natural disasters and other factors that can be ultimately tied to economic development (Perkins et al., 2016)²¹. In the same way that good nutrition may encourage physical growth and therefore magnify women’s productivity, early pregnancy, and limitations to access contraception could undermine female’s development.

²⁰ Deaton, A. “Height, health, and development.” *Proceedings of the National Academy of Sciences*, 104(33) (2007): 13232-13237.

²¹ Perkins, J. M., Subramanian, S. V., Davey Smith, G., & Özaltin, E. “Adult height, nutrition, and population health.” *Nutrition reviews*, 74(3) (2016): 149-165.

In this section we look at initial forms of agency from the health dimension. First, we estimate an OLS model with Peruvian women’s height as a function of the same family and regional factors we use throughout the analysis. Second, for all three economies we fit a series of logit regressions to determine how those factors impact the probability of (1) early pregnancy; (2) access to and knowledge of contraception.

Height

The estimates have the expected signs, move in the expected directions and most of them are statistically significant which further supports our hypothesis (Table 3a). First, young Peruvian women from richer households are taller than women from poorer families. On average, all else equal, a female from the richest quintile is 4.541 cm taller than a woman from quintile 1 and a woman from the middle quintile is 1.758 cm taller than someone from quintile 1.

Table 3a. Determinants of Health (Physical Agency)

| Variables | Estimates | Error |
|-------------------------|------------|---------|
| Poorer | 0.524** | (0.253) |
| Middle | 1.758*** | (0.299) |
| Richer | 3.076*** | (0.331) |
| Richest | 4.541*** | (0.379) |
| Sex of Household Head | 0.514*** | (0.180) |
| Electricity | 0.670** | (0.270) |
| Rural Location | 0.026 | (0.221) |
| Telephone | 0.179 | (0.247) |
| Constant | 150.134*** | (0.304) |
| Observations | 5,194 | |
| Adjusted R ² | 0.089 | |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Height is a smoothly increasing function in income. This may be an indicative that richer families can afford better diets for their daughters and therefore they grow more or are potentially healthier. Young women from households led by women and young females from households with access to electricity are slightly taller than those whose household head is a man and those who do not have electricity at home, respectively. The coefficients for telephone and location suggest these factors are not be as relevant to determine women’s height.

To evaluate how these relationships are changing across time, we also estimated the same OLS model on data from 2007-2008. Results are presented in Table 3b. Overall, results are similar to those of 2012-2013, both in terms of statistical significance and in terms of the signs and magnitudes of the coefficients. The 2007-2008 findings suggest that all else equal, on average, a young woman from a household of the richest quintiles was 3.665 cm taller than a woman from the poorest quintile. In contrast, in 2012-2013, a young woman with similar characteristics was 4.541 cm taller than someone from quintile 1 (Table 3a). When we analyze the estimates from the middle quintile, in 2007-2008, a woman whose family was from this quintile was 1.782 taller than a woman from quintile 1; while in 2012-2013 the estimate of the middle quintile was 1.758.

Table 3b. Determinants of Health (Physical Agency)

| Variables | Estimates | Error |
|-------------------------|------------|---------|
| Poorer | 0.591** | (0.293) |
| Middle | 1.782*** | (0.364) |
| Richer | 2.883*** | (0.396) |
| Richest | 3.665*** | (0.431) |
| Sex of Household Head | 0.464*** | (0.180) |
| Electricity | -0.544** | (0.264) |
| Location | -0.414* | (0.216) |
| Telephone | 0.684 | (0.234) |
| Bank Account | 0.774 | (0.305) |
| Constant | 150.169*** | (0.304) |
| Observations | 6,080 | |
| Adjusted R ² | 0.083 | |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

When analyzing the coefficients of the sex of the household head, we must highlight that it remains significant and positive in both periods. In the most recent period, however, it is larger. As opposed to the 2012-2013 analysis, the coefficients for electricity, location and telephone are significant. With the exception of electricity, they all have their expected signs. For instance, a young woman from a rural area is on average 0.4 cm shorter than a young woman from an urban region. In the same way, if in the female's household there is a telephone, she would be 0.7 cm taller than a female that does not have a telephone in her house.

Early Pregnancy

For early pregnancy, coefficients are moderately significant and more often than not, they move in the expected directions (Table 4a). The results show the decrease in the log of the odds is larger as the household wealth increases, which suggests that women from poorer families are more likely to be pregnant at early stages of their lives. In other words, women from richer households are less likely to get pregnancy at early stages of their lives. Further, coefficients suggest that the change in the log odds of early pregnancy is smaller for women from households with access to electricity.

To analyze the changes across time, we estimated the same logit regression on data from 2007-2008 (see Table 4b). For these years, most wealth coefficients are larger and significant. This suggests that wealth has become a less significant determinant of early pregnancy over time, perhaps because public education or services have become more effective in reducing early pregnancy across the entire society. Similar to the most recent period, the coefficients for sex of the household head and access to telephone, apart from not being significant, did not always come with the expected signs. Thus, their relationship with the dependent variable is not sufficiently strong.

Table 4a. Determinants of Health: Early Pregnancy (Physical Agency) in 2012-2013

| | Peru | Indonesia | Philippines |
|-----------------------|----------------------|----------------------|----------------------|
| Poorer | -0.298 (0.241) | -0.102 (0.170) | -0.291 (0.258) |
| Middle | -0.156 (0.283) | -0.151 (0.190) | -0.444 (0.279) |
| Richer | -0.874** (0.341) | -0.285 (0.227) | -0.742** (0.299) |
| Richest | -1.450*** (0.443) | -0.531* (0.303) | -1.886*** (0.450) |
| Sex of Household Head | -0.200 (0.178) | 0.014 (0.176) | 0.135 (0.213) |
| Electricity | -0.584*** (0.226) | -0.420** (0.214) | 0.353 (0.289) |
| Rural Location | -0.197 (0.215) | 0.371*** (0.142) | -0.335* (0.181) |
| Telephone | 0.090 (0.246) | -1.290** (0.606) | -0.282 (0.583) |
| Bank Account | | -0.610*** (0.166) | |
| Constant | -2.259*** (0.258) | -2.781*** (0.230) | -2.791*** (0.270) |
| Observations | 5,242 | 8,492 | 3,893 |
| Akaike Inf. Crit. | 1,671.724 | 2,408.439 | 1,278.817 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Access and Knowledge of Contraception

For evaluating the access to fertility control, we estimated two logit regressions. In the first one, we estimate the likelihood of the young woman having access to contraception. If she does, the dependent variable is equal to 1, otherwise, it is equal to zero. In the second one, the dependent variable measures if the female knows of any contraceptive method. If she does, the dependent variable is equal to 1, otherwise, it is equal to zero.

Table 5a. Determinants of Health: Fertility Controls (Physical Agency)

| | Access to contraception | | | Knows of Contraception | | |
|-----------------------|-------------------------|---------------------|----------------------|------------------------|---------------------|---------------------|
| | Peru | Indonesia | Philippines | Peru | Indonesia | Philippines |
| Poorer | 0.376*** (0.104) | -0.004 (0.135) | -0.277* (0.161) | 0.090 (0.104) | 0.331** (0.145) | 0.566** (0.269) |
| Middle | 0.535*** (0.122) | -0.065 (0.137) | -0.326* (0.168) | -0.025 (0.123) | 0.626*** (0.172) | 1.600*** (0.401) |
| Richer | 0.587*** (0.131) | 0.079 (0.140) | -0.571*** (0.170) | -0.520*** (0.135) | 1.130*** (0.219) | 1.128*** (0.358) |
| Richest | 0.739*** (0.147) | 0.059 (0.152) | -0.588*** (0.183) | -0.704*** (0.155) | 0.695*** (0.225) | 0.952** (0.386) |
| Sex of Household Head | 0.066 (0.066) | 0.138 (0.095) | 0.161 (0.110) | 0.054 (0.068) | -0.052 (0.141) | 0.083 (0.263) |
| Electricity | -0.045 (0.115) | 0.259 (0.289) | -0.148 (0.181) | -0.426*** (0.110) | 1.556*** (0.144) | 0.838*** (0.243) |
| Rural Location | -0.134 (0.088) | 0.094 (0.079) | -0.084 (0.095) | -0.269*** (0.090) | -0.231* (0.120) | -0.025 (0.214) |
| Telephone | 0.071 (0.086) | -0.078 (0.120) | -0.147 (0.171) | -0.00003 (0.092) | -0.365 (0.240) | 2.024* (1.040) |
| Bank Account | | 0.076 (0.082) | | | 0.114 (0.133) | |
| Constant | -0.280** (0.125) | -0.641** (0.284) | 0.251 (0.167) | -0.062 (0.121) | 1.169*** (0.161) | 1.978*** (0.236) |
| Observations | 4,985 | 3,501 | 2,261 | 5,242 | 8,492 | 3,893 |
| Akaike Inf. Crit. | 6,808.890 | 4,799.945 | 3,075.293 | 6,614.753 | 3,327.911 | 1,084.413 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

When analyzing both access and knowledge of contraception, results are mixed (Table 5a). While some coefficients are statistically significant, the signs were not always the expected ones. In most cases, however, the magnitude of the coefficients behaves according to our expectations. For example, the results from Peru suggests that all else equal, the wealthier the family, the larger the change in the log odds of being able to access any fertility control method. In the same way, the significant and positive coefficients suggest that, all else equal, a young woman is more likely to know about any contraceptive method as the family wealth increases.

In all three economies, even though the coefficients are not significant, the negative sign of location implies that young women from rural areas are less likely to have both access to contraceptive methods. Similarly these women are less likely to know about the existing choices of family planning. In both Indonesia and the Philippines, the pattern across wealth quintiles is clear for the knowledge of contraception. The coefficients for the sex of the household head, bank account and telephone do not provide enough evidence to establish a clear relationship between them and the likelihood of accessing/knowing about fertility control.

We estimated the same regression for 2007-2008. Wealth coefficients are moderately significant. In the case of access to contraception, estimates are smaller than those of 2012-2013. For example, the change in the log odds of having access to contraception for a young Peruvian woman from the middle quintile was 0.49 in 2007-2008 (Table 5b) and 0.59 in 2012-2013. All else equal, this increase may imply that there has been an improvement in the access to contraceptive methods in Peru. The relationships between the rest of the explanatory variables with the dependent variable are unclear given the variations in the signs and magnitudes of the estimates. In the case of knowledge of contraception, the wealth estimates of Peruvian and Filipino women behave similarly, suggesting that women from poorer households are less likely to know about family planning.

Table 5b. Determinants of Health: Contraception (Physical Agency) in 2007-2008

| | Access to contraception | | | Knows of Contraception | | |
|-----------------------|-------------------------|-------------------|---------------------|------------------------|---------------------|---------------------|
| | Peru | Indonesia | Philippines | Peru | Indonesia | Philippines |
| Poorer | 0.195 (0.124) | -0.184 (0.331) | 0.392* (0.229) | 0.182 (0.213) | 0.149 (0.364) | 0.833*** (0.246) |
| Middle | 0.520*** (0.143) | 0.126 (0.372) | 0.319 (0.242) | 1.256*** (0.366) | 0.166 (0.511) | 1.534*** (0.309) |
| Richer | 0.486*** (0.152) | -0.082 (0.391) | 0.323 (0.240) | 1.545*** (0.524) | 0.374 (0.686) | 1.640*** (0.316) |
| Richest | 0.491*** (0.162) | 0.170 (0.438) | 0.178 (0.255) | 1.965*** (0.704) | 14.379 (635.344) | 2.255*** (0.425) |
| Sex of Household Head | 0.076 (0.060) | 0.587 (0.394) | -0.043 (0.123) | -0.122 (0.223) | 0.191 (0.482) | -0.160 (0.209) |
| Electricity | 0.024 (0.098) | 0.245 (0.381) | -0.499** (0.235) | 0.237 (0.215) | 1.202*** (0.308) | 0.400* (0.231) |
| Location | -0.263*** (0.073) | 0.212 (0.228) | -0.110 (0.106) | -1.337*** (0.299) | -0.727 (0.496) | 0.188 (0.180) |
| Telephone | 0.092 (0.075) | 0.198 (0.229) | -0.069 (0.156) | -0.143 (0.542) | 0.732* (0.441) | -0.274 (0.401) |
| Bank Account | 0.134** (0.059) | | | -0.357 (0.228) | | |
| Constant | -0.534*** (0.122) | -0.172 (0.382) | 0.134 (0.189) | 4.019*** (0.337) | 2.568*** (0.512) | 1.341*** (0.202) |
| Observations | 6,831 | 430 | 1,825 | 7,848 | 1,573 | 3,216 |
| Akaike Inf. Crit. | 9,316.535 | 598.369 | 2,531.390 | 1,324.587 | 573.698 | 1,357.353 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

This analysis also suggests potential policy actions. Early pregnancy and the accessibility of contraception should be in the scope of policy making. In theory, it is important to address this dimension because a young pregnant woman may be forced to skip school and stay home to take care of their children. Doing so limits both her capacity development and the contributions she could make to economic growth through her work. Similarly, young women that can access contraception methods can (1) avoid unwanted children and (2) sexually transmitted diseases. Both outcomes, if not prevented, pose additional costs that may ultimately be borne by the government. For that reason, governments should understand that women's productivity and therefore their contributions to economic growth may be undermined if at early stages of their lives they become pregnant or if the healthcare system fails to provide affordable contraception methods.

b) Determinants of education (cognitive agency)

In this section we estimate an OLS model to analyze the determinants of cognitive agency. We expect family and regional characteristics to have a significant influence on the educational attainment of young women. The results of this analysis are reported in Table 6a. The first explanatory variable, family wealth, is both positive and highly significant for all years. Overall, family wealth estimates from all three economies confirm our main hypothesis. This is a good indicator of the relevance of household wealth to a woman's educational attainment, all else equal. The estimates across quintiles show moderate variations between economies. In 2012, in Peru, for example, young women from the richest families had on average 2.4 years of additional schooling when compared to women in quintile 1 (Table 6a). In the Philippines, the estimates are similar. In Indonesia, however, women from the top quintile have only 1.4 years more years of schooling than someone from a family at the bottom of the pyramid. Overall, the association between household wealth and years of educational attainment is positive and significant.

Access to services like electricity and banking also proved to be relevant in young women's educational attainment. These effects are in addition to the effects of higher wealth that households with access to these services are also likely to have. For instance, if the household can access the electric grid, estimates are positive and range between 0.62 and 1.6 years of additional schooling. Similarly, if the family is somehow part of the financial sector (that is, if the household (Indonesia only) has a bank account), then women had on average 0.8 more years of schooling. Having a telephone at the household, however, does not seem to be an especially important factor. In fact, estimates do not always have the expected sign and they are rarely significant.

When accounting for demographics, we find that if the household head is a woman the years of additional schooling always increase but very moderately, though. Estimates range between 3 and 8 months on average. For example, in 2012-2013, in the Philippines and Peru, if the household head was a woman, on average, young women had 3 more months of schooling when compared to females from households led by men. Similarly, the location of the household accounts for some of the differences. In fact, if the woman is from a rural household, then she would have between 3 and 6 months less of additional schooling, when compared to females from urban areas. Again, these estimates reflect results in addition to the wealth effects typically associated with these different environmental factors.

Table 6a. Determinants of Education (Cognitive Agency)

| | Peru | Indonesia | Philippines |
|-------------------------|----------------------|----------------------|---------------------|
| Poorer | 0.956*** (0.106) | 0.887*** (0.088) | 0.948*** (0.125) |
| Middle | 1.687*** (0.124) | 1.147*** (0.090) | 1.522*** (0.128) |
| Richer | 2.150*** (0.128) | 1.355*** (0.094) | 2.087*** (0.133) |
| Richest | 2.369*** (0.140) | 1.421*** (0.128) | 2.351*** (0.146) |
| Sex of Household Head | 0.252*** (0.060) | 0.627*** (0.102) | 0.257*** (0.090) |
| Electricity | 0.620*** (0.123) | 1.620*** (0.177) | 1.162*** (0.152) |
| Rural Location | -0.260*** (0.089) | -0.541*** (0.057) | 0.254*** (0.076) |
| Telephone | 0.022 (0.077) | -0.294** (0.122) | -0.003 (0.139) |
| Bank Account | | 0.825*** (0.060) | |
| Constant | 7.762*** (0.132) | 7.103*** (0.177) | 6.682*** (0.146) |
| Observations | 5,242 | 8,489 | 3,893 |
| Adjusted R ² | 0.228 | 0.167 | 0.193 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Though the estimates for effects of basic services and demographics are smaller than the effects of family wealth, their impact on schooling is clear and shall not be ignored. This provides room for a policy discussion. Intuitively, women from rural areas may experience more difficulties to attend school than women from big cities. While some of these limitations may come from family budget constraints, others can be the result of structural weaknesses in the public goods that are provided to individuals. Policy makers need to be aware of the extent to which these flaws can undermine educational attainment.

A strong implication of this analysis is that governments should ensure access to public services in rural areas. This includes electricity, clean water, garbage collection services and access to basic banking services. These policies may include direct provision of these services or incentives to market institutions that can make them more accessible to rural residents. Second, governments should ensure rural regions are equipped with schools and trained teachers to meet the needs of students whose families cannot afford private education services—in other words, that they offset at least part of the effects of family wealth on educational outcomes.

To assess how these important relationships are changing over time, we also repeated this analysis for an earlier survey year, that is, for data collected for 2007-2008. We then compared estimates for that year with results for 2012-2013. The results for 2007-2008 are reported in Table 6b. Like the regressions for the later years, these were also highly significant, and most coefficients had the same sign and reasonably similar magnitude as those shown in Table 6a.

Table 6b. Determinants of Education in 2007-2008 (Cognitive Agency)

| | Peru | Indonesia | Philippines |
|-------------------------|----------------------|---------------------|----------------------|
| Poorer | 1.016*** (0.112) | 0.929*** (0.207) | 1.405*** (0.210) |
| Middle | 2.077*** (0.131) | 1.611*** (0.231) | 2.308*** (0.226) |
| Richer | 2.604*** (0.137) | 2.056*** (0.270) | 2.767*** (0.235) |
| Richest | 2.932*** (0.144) | 2.563*** (0.350) | 2.911*** (0.264) |
| Sex of Household Head | 0.202*** (0.053) | 0.246 (0.249) | 0.126 (0.145) |
| Electricity | 0.608*** (0.095) | 0.735*** (0.220) | 1.053*** (0.209) |
| Rural Location | -0.508*** (0.070) | -0.068 (0.178) | -0.358*** (0.121) |
| Telephone | -0.028 (0.063) | 1.024*** (0.172) | -0.199 (0.206) |
| Bank Account | 7.096*** (0.108) | 5.611*** (0.237) | 6.808*** (0.173) |
| Observations | 9,287 | 1,573 | 3,216 |
| Adjusted R ² | 0.275 | 0.197 | 0.176 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Several observations emerge from the comparison of the surveys. First, estimates for family wealth in 2007-2008 were also positive and highly significant. However, they were consistently larger than those for 2012-2013. For example, in 2007, all else equal, a young Indonesian female from the richest quintile had 2.6 more years of education than a female from quintile 1. In contrast in 2012, a female with the same characteristics only had 1.4 more years of schooling. A similar pattern is observed both in Peru and the Philippines. This could imply that wealth inequality generated greater differences in educational attainment in 2007-2008 than it did in 2012-2013. It is possible that wealth gaps have narrowed, making education more accessible for women in the poorest quintiles, or that public educational opportunities reduced the impact that wealth had on education differentials.

Second, in 2007-2008 female household heads had a slightly smaller impact in the dependent variable, though in two out of the three economies these estimates were not statistically significant. It may be an indicator that female leadership at the household level improved in 2012-

2013. In the most recent period, this factor became significant to evaluate female educational attainment and had a larger impact on schooling. This could also imply some progress in closing gender gaps and demonstrating women's capacity to promote the development of young ladies in their families. In particular, it is fair to say that women who understand the limitations that arise from not having access to education, may be more interested in paving the way to their daughters or nieces.

Third, estimates for electricity were significant and positive in 2007-2008 as well. Further, they were lower than estimates in 2012-2013—in other words, access to electricity became more important over time. The pace at which this factor has become more relevant is different across individual economies. For example, in Peru, the estimate changed from 0.61 to 0.62 between 2008-2012, while in Indonesia the change was steeper, increasing from 0.73 to 1.62. Location remains significant almost in all periods. The effect of access to telecommunications, even though it is not significant in most cases, has also increased over time. This suggests that economic activity has increased people's need to connect with others by phone or internet. We expect that with time the estimate will increase and could potentially become significant.

c) Determinants of asset and opportunities (economic agency)

To estimate access to capital, we next estimate whether the young woman owns a common luxury in a developing economy, private means of transportation. For this section we fit two logit regressions to estimate the probability for the respondent to have either (1) a car/truck or (2) a motorcycle. Regression outputs are reported in Table 7a.

Overall, the regressors are statistically significant. Most coefficients for household wealth and electricity are significant and positive. This suggests that the change in the log odds of a woman having a car increases if her family has more wealth and if the household can access the electric grid. The sex of the household head is significant and negative in most cases. This means that on average, all else equal, the log odds of a woman having a car, or a motorcycle decreases if the family is led by a woman. When analyzing how these relationships changed across time. In general, most of the coefficients continue to be significant, to have their expected signs and to move in the expected directions.

Table 7a. Determinants of Assets and Opportunities (Economic Agency)

| | Owns a Car or Truck | | | Owns a Motorcycle | | |
|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Peru | Indonesia | Philippines | Peru | Indonesia | Philippines |
| Poorer | 1.530*** (0.347) | 0.835* (0.453) | 0.508 (0.714) | 1.221*** (0.158) | 1.169*** (0.075) | 0.799*** (0.167) |
| Middle | 2.641*** (0.365) | 1.800*** (0.419) | 0.485 (0.746) | 1.797*** (0.176) | 1.899*** (0.086) | 1.440*** (0.171) |
| Richer | 3.229*** (0.376) | 3.014*** (0.403) | 2.433*** (0.652) | 1.490*** (0.188) | 2.538*** (0.103) | 2.160*** (0.172) |
| Richest | 4.400*** (0.381) | 4.761*** (0.404) | 4.373*** (0.642) | 1.190*** (0.207) | 3.622*** (0.148) | 2.757*** (0.182) |
| Sex of Household Head | -0.918*** (0.143) | -0.882*** (0.154) | -0.593*** (0.175) | -0.767*** (0.093) | -0.923*** (0.072) | -0.985*** (0.109) |
| Electricity | 0.209 (0.384) | -0.040 (0.649) | 0.161 (0.759) | -0.334** (0.168) | 0.756*** (0.124) | 0.158 (0.186) |
| Rural Location | 0.980*** (0.187) | 0.503*** (0.102) | 0.261* (0.148) | 0.045 (0.110) | 0.477*** (0.062) | 0.699*** (0.084) |
| Telephone | 0.047 (0.131) | 0.966*** (0.104) | 1.070*** (0.152) | -0.047 (0.104) | -0.453*** (0.150) | -0.708*** (0.145) |
| Bank Account | | 0.604*** (0.123) | | | 0.207*** (0.066) | |
| Constant | -5.360*** (0.406) | -5.866*** (0.621) | -5.510*** (0.641) | -2.196*** (0.172) | -1.554*** (0.129) | -2.654*** (0.163) |
| Observations | 5,242 | 8,474 | 3,893 | 5,242 | 8,484 | 3,893 |
| Akaike Inf. Crit. | 2,639.263 | 3,688.309 | 1,524.827 | 4,892.181 | 8,315.247 | 4,259.125 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

6. Conclusion

The ability to make choices is integral to being an effective economic agent, giving an individual greater ability to affect outcomes over the course of their life. Putting policies in place which increase women's ability to attain higher levels of education, own private means of transportation, and make decisions about their reproductive health will raise their base level of agency and, in turn, contribute to exposing them to a greater number of choices in the future. Investing in raising the levels of factors that contribute to initial agency goes a long way in closing the gap between inter-gender and intra-gender agency in Indonesia, Peru, and the Philippines.

Our findings show small similarities and differences across all three economies. First, in Peru, height is a smoothly increasing function in family income. This suggests that women from wealthier families are potentially healthier. Similarly, results show that Peruvian women from household with access to electricity and located in urban areas are taller (healthier). Second, when analyzing early pregnancy and fertility controls, results were mixed. For early pregnancy, in all three economies most family characteristics were not significant, but their estimates had the expected signs. For fertility controls, however, we found clear relationships between the dependent variables and family factors. In the Philippines, family wealth, access to electricity and telecommunications proved to be highly significant in the likelihood of the woman having knowledge of contraception. In this aspect, estimates for Peru and Indonesia are often smaller and not equally significant. Across all three economies, when looking at access to contraceptives, the negative sign of location implies that young women from rural areas are less likely to access family planning resources.

Third, in general, family wealth, along with location and access to electricity proved to be significant factors in the young woman's education. In fact, the impact of family wealth over education is similar on Peruvian and Filipino women. In these two economies, as the quintile is richer, additional years of schooling range between 0.95 and 2.40. In Indonesia, estimates are smaller, ranging between 0.89 and 1.42 years. Results for household location, however, are larger in Indonesia than in Peru and the Philippines, suggesting that young Indonesian women's education is affected in a larger(negative) scale if their family lives in a rural area. Fourth, when analyzing economic agency, we found family income, location, and the sex of the household wealth to be the most significant factors in determining the likelihood of owning a private mean of transportation. This pattern is roughly the same for the three countries. Further, in Indonesia, having access to the financial sector also proved to be relevant. For the three different forms of agency, results persist across time periods, or in other words, estimated parameters for the same regressions behaved similarly both 2007-2008 and 2012-2013.

Initial agency, though, is only part of the equation that describes a person's overall static and dynamic ability to make choices; that is, an agent's ability to make choices at a given time-constrained scenario, and the evolution of their agency over time. Overall, our work is a pilot study to examine gender inequality in APEC member economies. Our findings suggest a fruitful avenue for learning more about the root causes of inequality as well as a policy discussion on how to mitigate them. We believe that analyzing these root causes of inequality is relevant to understanding the job that APEC has done through initiatives like La Serena Roadmap for Women and Inclusive Growth and the Policy Partnership on Women and the Economy (PPWE). Both approaches focus on the empowerment and integration of women in the APEC region by working on aspects like access to credit, capital, leadership positions and participation in the labor force. From our view, these areas, along with other dimensions of women's empowerment are closely

tied to family and environment factors. Those factors have the power to broaden the spectrum of choices and opportunities included in the target areas that APEC is looking at.

Choosing to select young women as our study sample was an effort to rule out sources of temporal endogeneity, but inspires avenues for further research; new approaches to explaining initial agency, exploring dynamic agency and analyzing differences in gender patterns. A second step towards expanding this analysis should include other data sets that encompass macro variables and other economic outcomes. Ideally, these outcomes should be the aspects that policy makers are currently working with. Due to data limitations we could estimate a model for Indonesia only (Table 8) and the results suggest that there might be additional value in addressing male-female comparisons of the early-life determinants of inequality. Another aspect to consider is expanding the analysis to other economies. The DHS data our research uses is available for dozens of countries, including several APEC members such as Mexico, Thailand, Vietnam, and Papua New Guinea, although time periods do not align exactly among those datasets.

Exhibits

Table 4b. Determinants of Health: Early Pregnancy (Physical Agency) in 2007-2008

| | Peru | Indonesia | Philippines |
|-----------------------|----------------------------------|----------------------------------|----------------------------------|
| Poorer | -0.471 ^{***} (0.166) | 0.532 ^{**} (0.209) | -0.007 (0.319) |
| Middle | -0.691 ^{***} (0.218) | 0.575 ^{**} (0.245) | -0.133 (0.354) |
| Richer | -1.293 ^{***} (0.259) | 0.816 ^{***} (0.264) | -0.461 (0.379) |
| Richest | -1.525 ^{***} (0.312) | 0.445 (0.344) | -0.526 (0.442) |
| Sex of Household Head | -0.132 (0.134) | 0.134 (0.244) | -0.224 (0.267) |
| Electricity | -0.061 (0.161) | -0.413 [*] (0.212) | -0.213 (0.316) |
| Location | -0.121 (0.143) | -0.068 (0.169) | 0.220 (0.203) |
| Telephone | -0.267 (0.213) | 0.182 (0.164) | -0.886 [*] (0.490) |
| Constant | -2.156 ^{***} (0.179) | -1.615 ^{***} (0.217) | -2.766 ^{***} (0.263) |
| Observations | 9,287 | 1,573 | 3,216 |
| Akaike Inf. Crit. | 3,302.118 | 1,471.978 | 1,108.975 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Table 5b. Determinants of Health: Contraception (Physical Agency) in 2007-2008

| | Access to contraception | | | Knows of Contraception | | |
|-----------------------|-------------------------|-------------------|---------------------|------------------------|---------------------|---------------------|
| | Peru | Indonesia | Philippines | Peru | Indonesia | Philippines |
| Poorer | 0.195 (0.124) | -0.184 (0.331) | 0.392* (0.229) | 0.182 (0.213) | 0.149 (0.364) | 0.833*** (0.246) |
| Middle | 0.520*** (0.143) | 0.126 (0.372) | 0.319 (0.242) | 1.256*** (0.366) | 0.166 (0.511) | 1.534*** (0.309) |
| Richer | 0.486*** (0.152) | -0.082 (0.391) | 0.323 (0.240) | 1.545*** (0.524) | 0.374 (0.686) | 1.640*** (0.316) |
| Richest | 0.491*** (0.162) | 0.170 (0.438) | 0.178 (0.255) | 1.965*** (0.704) | 14.379 (635.344) | 2.255*** (0.425) |
| Sex of Household Head | 0.076 (0.060) | 0.587 (0.394) | -0.043 (0.123) | -0.122 (0.223) | 0.191 (0.482) | -0.160 (0.209) |
| Electricity | 0.024 (0.098) | 0.245 (0.381) | -0.499** (0.235) | 0.237 (0.215) | 1.202*** (0.308) | 0.400* (0.231) |
| Location | -0.263*** (0.073) | 0.212 (0.228) | -0.110 (0.106) | -1.337*** (0.299) | -0.727 (0.496) | 0.188 (0.180) |
| Telephone | 0.092 (0.075) | 0.198 (0.229) | -0.069 (0.156) | -0.143 (0.542) | 0.732* (0.441) | -0.274 (0.401) |
| Bank Account | 0.134** (0.059) | | | -0.357 (0.228) | | |
| Constant | -0.534*** (0.122) | -0.172 (0.382) | 0.134 (0.189) | 4.019*** (0.337) | 2.568*** (0.512) | 1.341*** (0.202) |
| Observations | 6,831 | 430 | 1,825 | 7,848 | 1,573 | 3,216 |
| Akaike Inf. Crit. | 9,316.535 | 598.369 | 2,531.390 | 1,324.587 | 573.698 | 1,357.353 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Table 7b. Determinants of Assets and Opportunities (Economic Agency) in 2007-2008

| | Owns a Car or Truck | | | Owns a Motorcycle | | |
|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Peru | Indonesia | Philippines | Peru | Indonesia | Philippines |
| Poorer | 13.695 (239.023) | 0.324 (0.838) | 16.079 (436.029) | 2.443*** (0.599) | 1.071*** (0.177) | 1.442*** (0.319) |
| Middle | 16.163 (239.023) | 0.568 (0.837) | 18.035 (436.029) | 4.067*** (0.611) | 1.442*** (0.205) | 2.494*** (0.330) |
| Richer | 16.896 (239.023) | 1.084 (0.820) | 19.574 (436.029) | 4.407*** (0.618) | 2.193*** (0.239) | 3.068*** (0.332) |
| Richest | 18.283 (239.023) | 2.043** (0.827) | 21.704 (436.029) | 4.431*** (0.623) | 2.835*** (0.343) | 3.672*** (0.341) |
| Sex of Household Head | -0.802*** (0.126) | -1.429 (1.030) | -0.950*** (0.187) | -0.537*** (0.112) | -0.461* (0.240) | -0.783*** (0.132) |
| Electricity | -0.196 (0.349) | 15.140 (887.991) | -2.890*** (0.732) | -0.510*** (0.194) | 0.154 (0.197) | -0.261 (0.293) |
| Location | 0.888*** (0.157) | 0.313 (0.357) | 0.336** (0.166) | 0.320** (0.127) | 0.628*** (0.159) | 0.514*** (0.101) |
| Telephone | 0.052 (0.107) | 2.519*** (0.637) | 1.120*** (0.149) | 0.151 (0.109) | 1.143*** (0.138) | -0.344** (0.138) |
| Bank Account | 0.598*** (0.094) | | | | | |
| Constant | -19.359 (239.023) | -21.237 (887.991) | -19.380 (436.029) | -5.964*** (0.591) | -2.411*** (0.215) | -3.547*** (0.250) |
| Observations | 7,848 | 1,573 | 3,216 | 9,287 | 1,573 | 3,216 |
| Akaike Inf. Crit. | 3,621.872 | 315.502 | 1,465.996 | 4,590.291 | 1,699.645 | 3,114.497 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

Table 8. Determinants of Education for Young Men in Indonesia

| | 2012 | 2007 |
|-------------------------|----------------------|----------------------|
| Poorer | -0.962 (0.830) | 1.456** (0.666) |
| Middle | 1.316 (1.396) | 0.880 (1.033) |
| Richer | -0.855 (1.011) | 1.867* (1.128) |
| Richest | 3.743*** (1.153) | 4.388*** (1.653) |
| Sex of Household Head | 2.880*** (0.979) | -3.303*** (0.722) |
| Electricity | 1.086 (1.440) | 0.115 (0.925) |
| Location | 1.065 (0.729) | -2.867*** (0.750) |
| Telephone | -8.595*** (1.404) | -1.216 (0.962) |
| Constant | 6.127*** (1.572) | 8.612*** (0.871) |
| Observations | 65 | 46 |
| Adjusted R ² | 0.155 | 0.248 |

Notes: *, **, and *** represent significance at the 10%, 5%, and 1% levels

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