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Gender Inequality in Latin America and the Caribbean

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LACIR
LATIN AMERICA AND CARIBBEAN INEQUALITY REVIEW

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Gender Inequality in Latin America and the Caribbean*

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November 13, 2023

1 Introduction

This chapter examines gender inequality focusing on two critical spheres in which gender inequality is generated: education and work. Our objective is to provide a current snapshot of gender inequality across key indicators as well as a dynamic perspective that highlights successes and failures. We facilitate a cross-country comparison as well by grouping countries within Latin America by their level of economics development and drawing comparisons with countries outside the region. Finally, we reflect on differences in the ways that gender inequalities play out across different socio-economic groups, particularly those that highlight other sources of inequality.

Following a life-cycle approach, we start by examining gender inequalities in both quantity of education and performance at different levels of schooling – from pre-school to higher education. The picture that emerges is mixed. In some important dimensions girls are more advantaged than boys. Girls are more likely to complete secondary and higher education and throughout schooling outperform boys in reading. A key dimension in which they continue to be disadvantaged, however, is performance in math and the likelihood of completing a degree in a STEM subject. Instead, women are over-represented in fields such as Health and Education. This is significant because labor market returns to STEM subjects are much higher than those to Health or Education. Importantly, gender gaps in math are not evident at early stages of primary school and the cross-country variation in gender gaps suggests that environmental factors are at play. This is consistent with evidence we present of gender gaps in confidence in math ability in favor of boys, even controlling for differences in achievement, as well as a large gender gap in aspirations for STEM occupations. Notably, however, the broad consensus around the region among adults is that men and women have the same capacity for science and technology.

The second part of the chapter focuses on the worksphere. Here we document significant improvements in female labor force participation over the last 20 years, especially among the least-educated women (those with incomplete secondary education). However, progress has not been equal across all the countries in the region – the pace of improvement in this dimension has been slowest in the least economically developed countries. These are also the countries where a significant proportion of the adult working population, especially among men, continue to hold highly conservative norms about

*We are grateful to seminar participants at the LACIR workshop for helpful discussion and to our discussant Florencia Torche for her suggestions. We thank Jessica Bracco, Florencia Pinto, and Julián Pedrazzi for excellent research assistance.

women's participation in work. Honing in on the working population, we continue to see persistent significant differences in the quality of jobs men and women do, the remuneration received, as well as the balance between paid market and unpaid non-market work. Even after conditioning on education, employment sector, and occupation, we see a large gender wage gap in favor of men in most countries in the region which has remained constant or even increased over the last 20 years. Furthermore, we see that gender inequalities interact with socio-economic inequalities in the work sphere. For example, gender gaps in indicators of job quality (working in the informal sector and working for a larger firm) are significantly greater among the least-educated group than the rest. Finally, across all of the countries in the region it continues to be the case that only women's labor market trajectories (not men's) are hugely impacted by the arrival of children, resulting in declines in labor force participation of up to 40%, with little evidence of recovery in the medium term.

This chapter proceeds as follows. Section 2 focuses on the education sphere, starting with access to education from the pre-primary to tertiary levels and moving on to consider quality of education and education related attitudes and expectations. The focus of Section 3 is on the work sphere. Here we consider participation in work, time spent on work, quality of jobs, remuneration for work, as well as factors that drive the large gender wage gaps that we observe. Section 3.6 concludes.

2 Education

In this part of the paper we focus on gender inequality in education at each of the key stages - pre-primary, primary, secondary, and tertiary. We consider several dimensions of education including quantity, achievement, and attitudes which may shape educational choices. We utilize GenLAC–CEDLAS harmonized microdata from national household surveys from more than 300 household surveys in the region to compute statistics as well as several sources of internationally comparable assessment data including SERCE, TERCE, PISA, and ECAF.[1] PISA is the OECD's Program for International Student Assessment. It evaluates students' knowledge and skills as they approach the end of their compulsory schooling (at 15 years of age). SERCE (Second Regional Comparative and Explanatory Study, 2006) and TERCE (Third Regional Comparative and Explanatory Study) are regional exams for primary education (third and sixth grades) produced by UNESCO. Nearly every country in Latin America took part in TERCE. The CAF Survey (ECAF) 2015 was carried out by CAF-development bank of Latin America, and has information about adult's skills in 10 major cities in 10 LAC countries. Table B.1 in Appendix B.2 lists the surveys used in this chapter for 17 Latin American countries. For more details, see Appendix B.

We classified countries into three broad income groups based on their GNI per capita (in US$) for the period 2010-2020 and the corresponding World Bank Analytical Classifications: (1) Lower-middle income (LMI), which we defined as countries that were considered LMI at least once in 2010-2020; (2) Upper-middle income (UMI), which we defined as countries that were considered UMI during the entire 2010-2020 period; (3) High income (HI), which we defined as countries that were considered HI at least once in 2010-2020. Note that whenever we show trends for a country group, it consists of the simple (unweighted) average across countries in that group.

[1]GenLAC is the CEDLAS (Center for Distributive, Labor and Social Studies) initiative to promote gender equity in Latin America and the Caribbean.

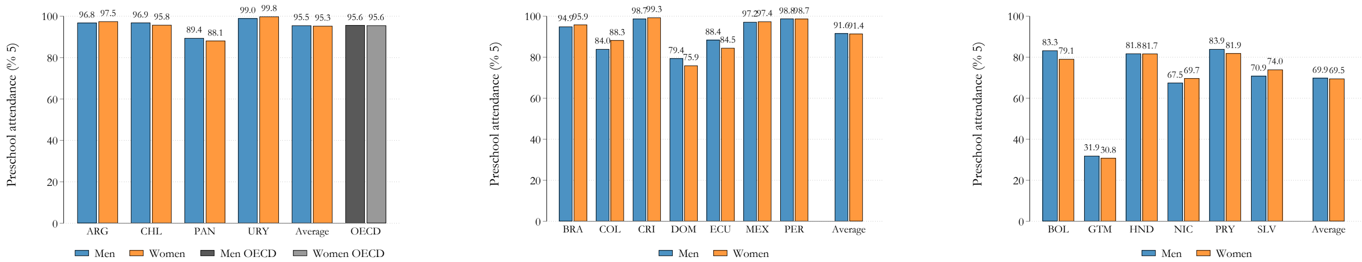
2.1 The Gender Gap in Education: Quantity

This section examines the gender gap in educational attainment as measured by completion of primary, secondary, and tertiary education as well as by attendance of a pre-school program.

2.1.1 Pre-School

We start with a snapshot of pre-primary educational attainment, which we measure as the proportion of children age 5 attending pre-school in 2019. There are stark differences in enrollment rates across LA countries: at around 95%, enrollment rates in HI countries are comparable to OECD enrollment rates, but they are significantly lower in LMI countries, at around 70%. Irrespective of levels of enrollment, however, in the great majority of LA countries, as in the OECD, boys and girls are equally likely to be attending pre-school (Figure 1). [2] This has been the case for some time, especially in the wealthier countries. Figure 2 shows the evolution of pre-school enrollment rates for boys and girls over the last 20 years; with the exception of a small gender gap in favor of girls in LMIs in the early 2000's, we see gender parity across the period.

Figure 1: Pre-school Attendance Among Children Aged 5



(a) High income

(b) Upper middle income

(c) Lower middle income

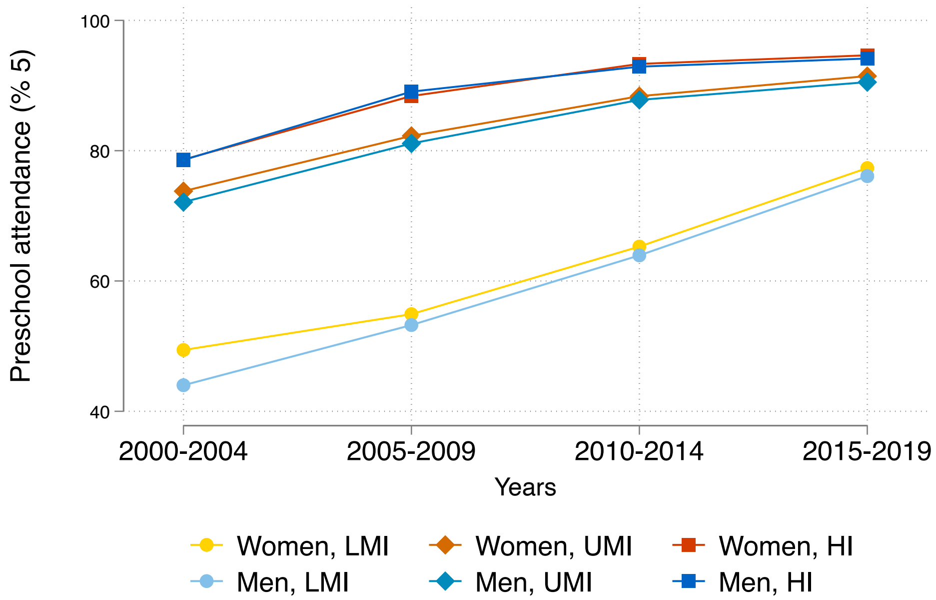
Note: The figure shows, by gender, the share of children age 5 attending pre-school in 2019 or the latest year prior to that (see Table B.1 in Appendix B.2). The average bars show unweighted means. The OECD average is the simple average over the OECD countries' enrollment rates for individuals aged 5 years old in 2019. *Source*: authors' own calculations based on household surveys (GenLAC) and Education at a Glance for the OECD.

2.1.2 Primary School

In the majority of LA countries there is also little evidence of gender differences in the completion of primary-school education. Figure 3 shows primary school completion rates for individuals who were between 20 and 30 years old in 2019. The absence of gender gaps in primary school enrolment is similar to what we see outside the region across OECD countries. Where there are gender gaps, they tend to be small and in favor of girls - for example, in Brazil, Dominican Republic, Nicaragua, and Honduras. Guatemala stands out as an exception with an 8 percentage point gap in favor of boys. As with pre-primary education, the picture has remained fairly constant over the last 20 years, especially in the wealthier countries (Figure 4). In LMI countries the average showed a small gender gap in favor of boys in the early 2000's, which closed entirely over the subsequent years.

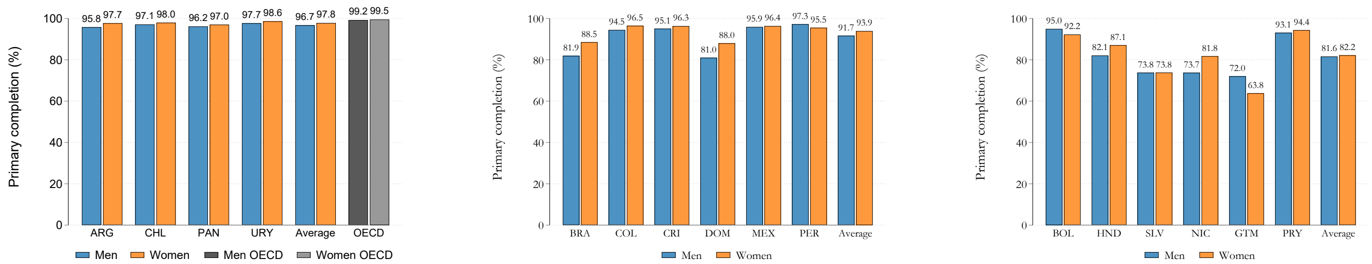
[2] Exceptions to this gender parity are the Dominican Republic, Ecuador, and Bolivia. In Colombia, the gap favors girls.

Figure 2: Evolution of Pre-school Attendance Among Children Aged 5, 2000-2019



Note: The figure shows, by gender and country income group, the evolution of the share of children age 5 attending pre-school. Each dot represents the (unweighted) cross-country average of their 5-year average. All countries with available data in the corresponding sub-periods are included (the panel is unbalanced for LMI countries). See Table B.1 in Appendix B.2). *Source*: authors' own calculations based on household surveys (GenLAC).

Figure 3: Primary School Completion



(a) High income **(b)** Upper middle income **(c)** Lower middle income

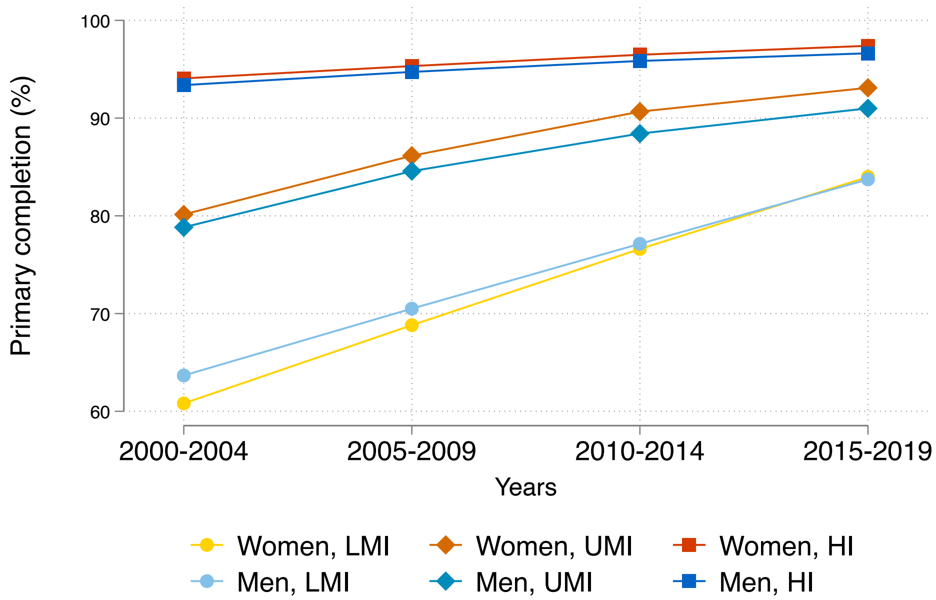
Note: This figure shows, by gender, the primary school completion rates. For LAC, the sample is restricted to individuals aged 20-30 years old. The average bars show unweighted means. The OECD average is the simple average over the OECD countries' primary completion rates for individuals aged 14-16 years old. The year is 2019 or the latest available up to that year (see Table B.1 in Appendix B.2.) *Source*: authors' own calculations based on household surveys (GenLAC) and UIS–UNESCO for the OECD.

2.1.3 Secondary School

The gender parity that we see in pre and primary school completion rates does not extend to secondary education. Figure 5 shows secondary school completion rates for individuals age 20-30 in 2019. Across the large majority of countries we see gaps in favor of women.These are largest in the high income countries; on average women here are 8 percentage points more likely to have completed secondary school than men, significantly greater than the 3.4 percentage points gap of OECD countries. By far the largest gap is in Uruguay at 15 percentage points. Despite being in the HI country group, Uruguay also has among the lowest secondary school completion rates in the region, especially for men, comparable to much poorer countries such as Guatemala, Nicaragua and Honduras.

The gaps in favor of women are not a recent phenomenon in the wealthier countries; Figure 6a shows

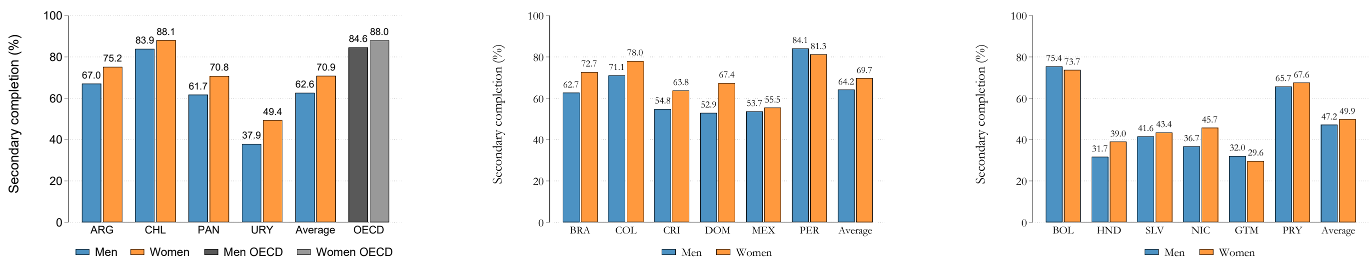
Figure 4: Evolution of Primary School Completion Rates 2000-2019



Note: The figure shows, by gender and country income group, the evolution of the primary school completion rates. Each dot represents the (unweighted) cross-country average of their 5-year average. *Source*: see note to Figure 2. Only countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries). See Table B.1 in Appendix B.2.

that they were already there in HI and UMI countries 20 years earlier. Furthermore, there is no sign of them narrowing over this period - if anything, they have widened slightly. In the poorer countries, the likelihood of completing secondary school was similarly low for women and men in the early 2000's. Over the last 20 years, however, women have experienced slightly faster-paced improvement than men so that by 2019 these countries are starting to look more similar to the wealthier countries in terms of the gender gap, though not in terms of completion levels.

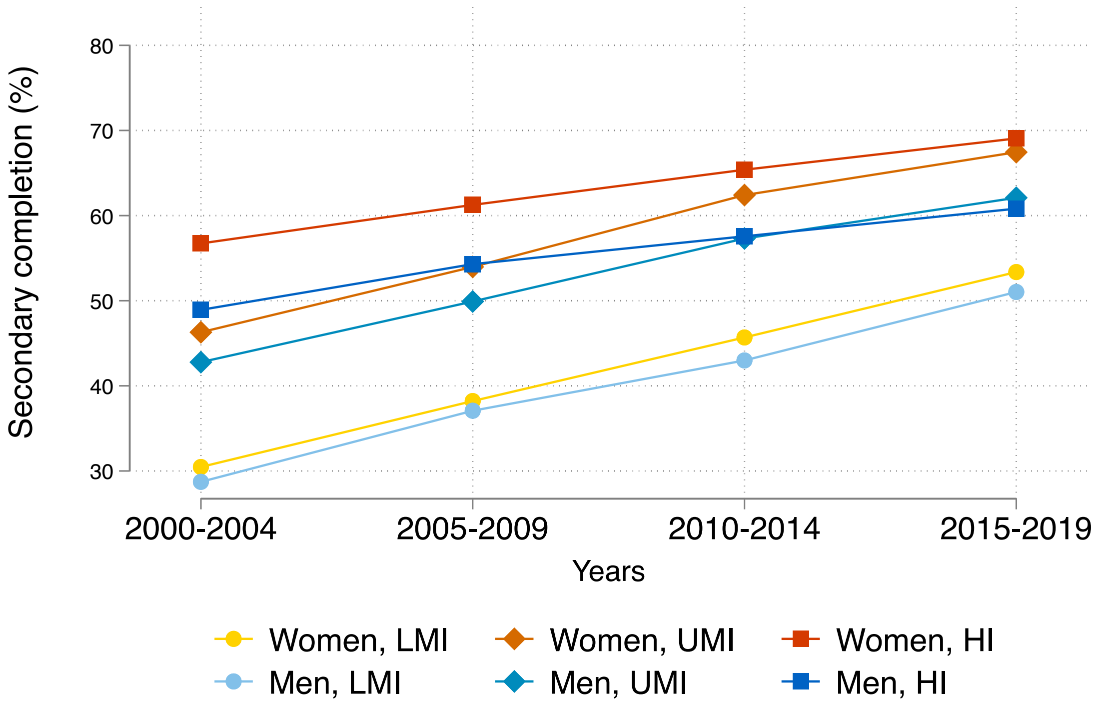
Figure 5: Secondary School Completion (2019)



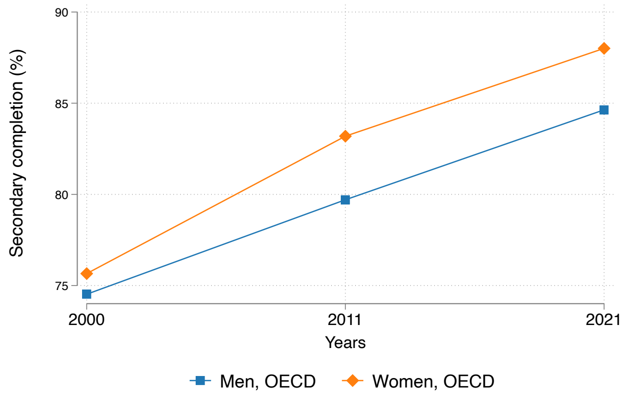
(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: This figure shows, by gender, the secondary school completion rates. The sample is restricted to individuals aged 20-30 years old, except in the case of OECD where it is restricted to individuals aged 25-34 years old. The average bars show unweighted means. *Source*: authors' own calculations based on household surveys (GenLAC) and OECD STATS. The year used in the calculations is 2021 in the OECD and 2019 or the latest available up to 2019 in LAC (see Table B.1 in Appendix B.2).

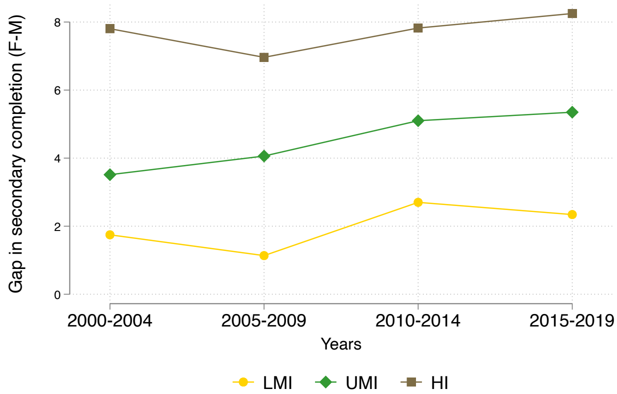
Figure 6: Evolution of Secondary School Completion Rates



(a) Secondary School Completion Rates in LAC



(b) Secondary School Completion Rates in the OECD



(c) Gender Gaps in Secondary School Completion Rates

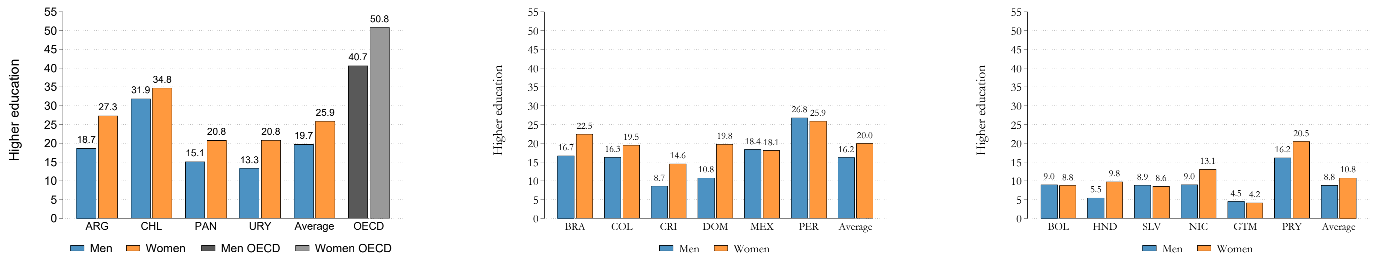
Note: Panels (a) and (b) show the evolution of secondary school completion rates. The sample is restricted to individuals aged 20-30 years old (except for the OECD, where it is restricted to individuals aged 25-34 years old). Panel (c) shows the evolution of the gender gap (F-M) in secondary school completion rates. In panels (a) and (c), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (b), each dot represents the (unweighted) annual average among the OECD countries. *Source*: see note to Figure 5. In LAC, all countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries). See Table B.1 in Appendix B.2.

2.1.4 Higher Education Completion

Women's higher rate of secondary-school completion translates into even larger gaps in higher education completion rates. These gaps are presented in Figure 7 for individuals age 30-40 in 2019. As at the secondary-school level, these gaps are largest in the wealthiest countries: on average men in these countries are 6 percentage points less likely to have completed higher education; the size of this gap is equivalent to 30% of men's higher education completion rate in these countries. The gap is smaller than the OECD average which is 10 percentage points. There are several countries in the LMI group where completion rates are the same for men and women but these tend to also be the countries with some of the lowest completion rates in the region. In the UMI group, Mexico and Peru are distinguished by their degree of gender parity.

While gender differences in primary and, for the most part, secondary school completion rates have been fairly stable over the last 20 years, there is clear evidence of a widening gap in higher education completion in favor of women across the region (Figure 8a). In the lower and middle income countries, higher-education completion rates were roughly the same among men than women in the early 2000's. In both sets of countries growth in completion rates among women has been faster than that among men over the subsequent period. This has also been the case in the high income countries, though there a gap already existed in the early 2000's. The widening of the gender gap in tertiary education in LAC is likely to keep on increasing, judging by the experience of the OECD as shown in Figure 8b.

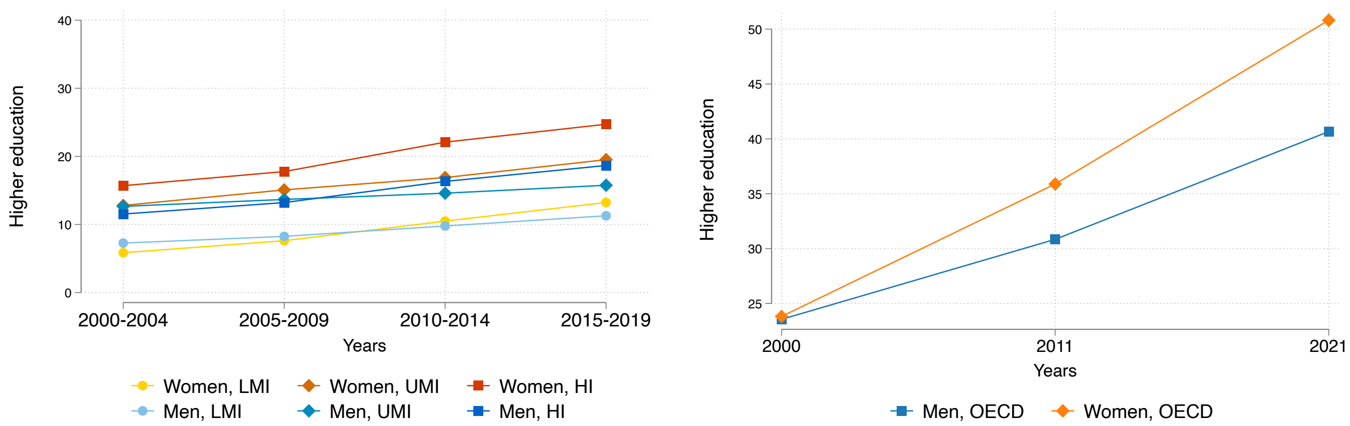
Figure 7: Higher Education Completion



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: This figure shows, by gender, the higher education completion rates. The sample is restricted to individuals aged 30-40 years old, except in the case of OECD where it is restricted to individuals aged 35-44 years old. The average bars show unweighted means. Data is from 2019. *Source*: see note to Figure 5.

Figure 8: Evolution of Higher Education Completion Rates



(a) Higher Education Completion Rates in LAC **(b)** Higher Education Completion Rates in the OECD

Note: The figure shows the evolution of higher education completion rates. The sample is restricted to individuals aged 30-40 years old (except for the OECD, where it is restricted to individuals aged 35-44 years old). In Panel (a), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (b), each dot represents the (unweighted) annual average among the OECD countries. *Source*: see note to Figure 6.

2.2 The Gender Gap in Education: Achievement

The analysis so far has shown that gender gaps in the level of education emerge at the secondary school level and widen at the tertiary level. We have also seen that these gaps are in favor of girls, have been widening slightly over time, and are largest in the wealthiest countries. We now examine whether and how the knowledge and skills acquired in the education system vary by gender. In order to make comparisons across countries, we use data from international assessment programs implemented in Latin America including SERCE and TERCE for primary school students, which is available for children in 3rd grade (age 7-8) and children in 6th grade (age 10-11), PISA for secondary school students (age 15), and ECAF data for adults (see Appendix B for descriptions of each of these data sets). While we do not have internationally comparable assessment data at the higher education level, data on subject choice provides an indication of gender differences at this stage.

2.2.1 Primary School

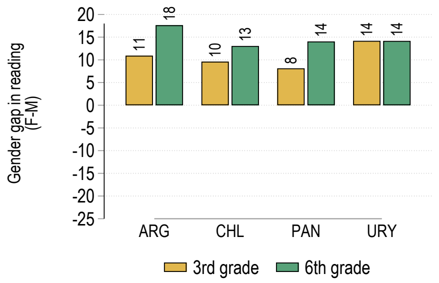
At the primary school level we use data from regional assessments for primary education produced by UNESCO. We use data from the Second and Third Comparative and Explanatory Studies (SERCE and TERCE, respectively) of 3rd and 6th graders in most LAC countries conducted in 2006 and 2013. We cannot benchmark the results here against countries outside the region as these assessments were conducted only in LAC.

Figure 9 shows gender gaps in TERCE reading and math scores in 2013 for children in 3rd and 6th grades. In the great majority of countries in the region 3rd-grade girls do at least as well or better than boys in reading, but the picture in math is already more nuanced. Girls in HI countries tend to do better in math whereas the split is more or less half-half in the UMI countries and favors boys in the LMI countries. Comparing the gender gap in 2006 to that of 2013 (the two years for which we have data) in Figure 10a (which shows the gender gap in 2006 on the x-axis vs that in 2013 on the y-axis), the fact that most countries are over the 45 degree line in math indicates that on average girls improved relative to boys. Boys are on average likewise catching up to girls in reading: most of the points in Figure 10c are either close to or below the 45 degree line indicating that the advantage girls have in reading relative to boys in 3rd grade has either remained constant or declined between 2006 and 2013.

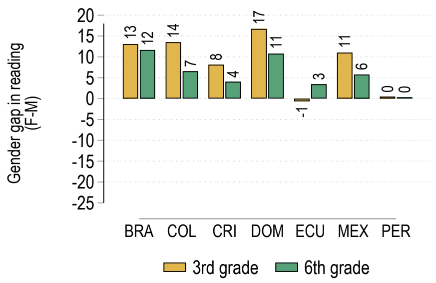
The female reading advantage persists in 6th grade and is larger than in 3rd grade for several HI and LMI countries (Figure 9a), but tends to decrease in the UMI countries. Comparing 2013 with 2006 in Figure 10c, we see a mixed picture in reading with girls decreasing their reading advantage in some countries but increasing it in others. In math, on the other hand, girls lose any advantage they had in 3rd grade relative to boys. In the vast majority of countries the gender gap in math favors boys in 6th grade. Furthermore, the math gender gap grew between 2006 and 2013 in almost all countries as reflected by the fact that almost all countries are below the 45 degree line in Figure 10b. This is in stark contrast to the patterns of improvement in girls' math performance relative to boys in 3rd grade over the same period.

Figure 9: Gender Gaps (F-M) in TERCE Scores

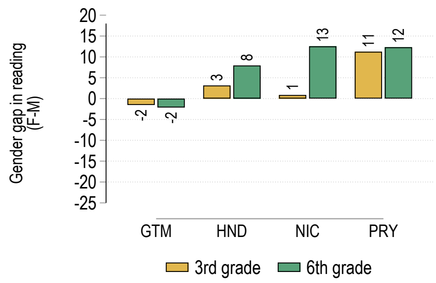
(a) Gender Gaps (F-M) in Reading



High income

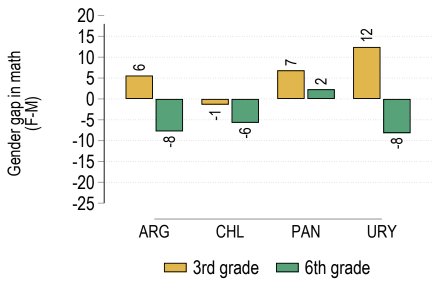


Upper middle income

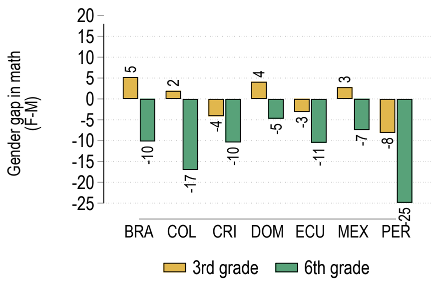


Low middle income

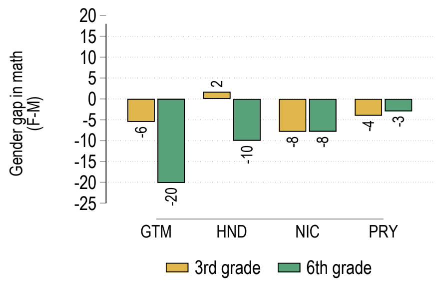
(b) Gender Gaps (F-M) in Math



High income



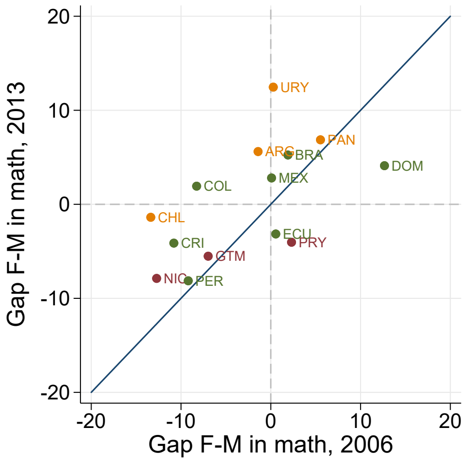
Upper middle income



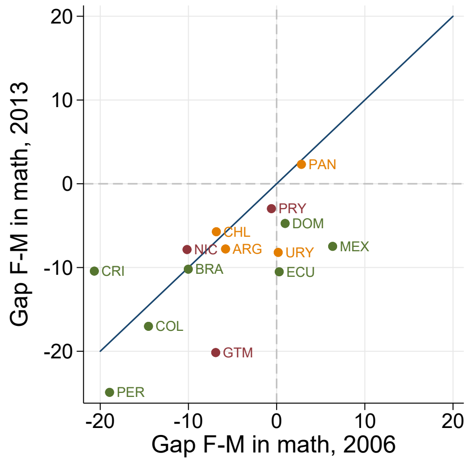
Low middle income

Note: The figure shows the gender gaps in reading scores (panel a) and math scores (panel b) in 2013, for children in 3rd (ochre bars) and 6th grades (green bars). The test score scale has a standard deviation of 100 points. We use the average score of boys as the base from which these differences are expressed. Boys' scores in reading (3rd grade, 6th grade): Argentina (507,500), Chile (567,551), Panama (486,475), Uruguay (517,525), Brazil (513,518), Colombia (512,523), Costa Rica (539,544), Dominican Republic (445,450), Ecuador (509,489), Mexico (514,526), Peru (521,505), Guatemala (496,490), Honduras (495,475), Nicaragua (478,472) and Paraguay (475,463). Boys' scores in math (3rd grade, 6th grade): Argentina (530,534), Chile (583,583), Panama (491,460), Uruguay (545,571), Brazil (537,525), Colombia (518,523), Costa Rica (560,540), Dominican Republic (446,439), Ecuador (526,518), Mexico (548,569), Peru (537,540), Guatemala (503,498), Honduras (507,485), Nicaragua (489,466) and Paraguay (490,457). *Source*: authors' own calculations based on TERCE; 2013.

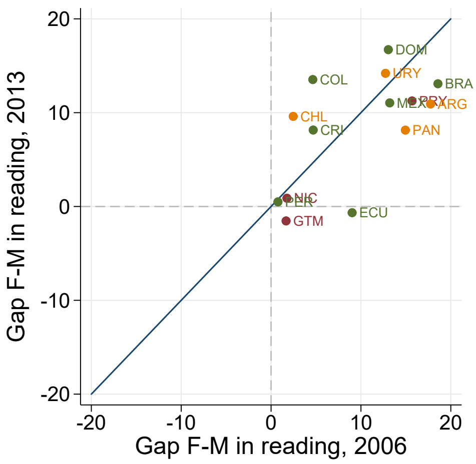
Figure 10: Change in Gender Gaps (F-M) 2006-2013



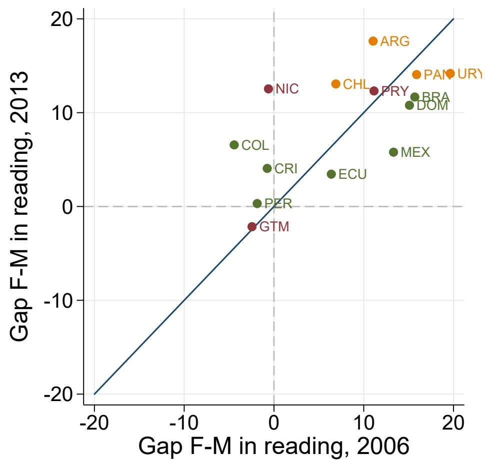
(a) Math (3rd grade).



(b) Math (6th grade)



(c) Reading (3rd grade).



(d) Reading (6th grade)

Note: The figure shows changes in test score gender gaps (F-M) between 2006 and 2013. Points above the 45 degree line show that the gap became more favorable to girls and points below show the opposite. The test score scale has a standard deviation of 100 points. HI countries are in orange, UMI countries are in green, and LMI countries are in violet. *Source*: authors' own calculations based on the Second and the Third Regional Comparative and Explanatory Study (SERCE 2006 and TERCE).

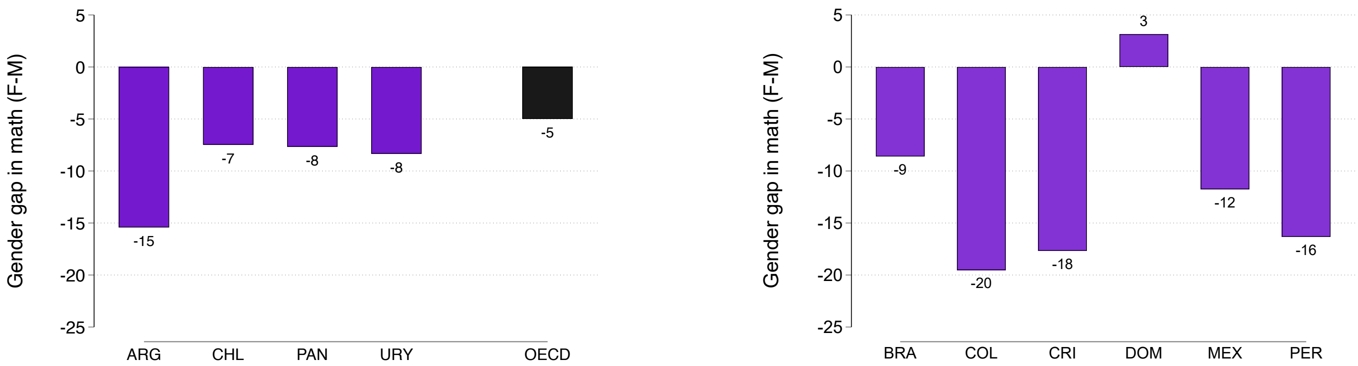
2.2.2 Secondary-School Performance

We use PISA data in order to study gender inequalities in school achievement at the secondary-school level (at age 15). The sample of countries in the analysis is restricted by the fact that PISA assessments have only been administered in a sub-set of LAC countries, excluding all the countries in the LMI group. Furthermore, countries participated in different rounds.

Figure 11 shows gender gaps in the PISA math assessment (F-M) in 2018 across the LAC countries for which these data are available. We also include (in black) the average gender gap in the OECD as a benchmark. In all countries with the exception of the Dominican Republic, we see a gap in favor of boys in the math score. In most HI countries, this gap is relatively small and comparable to that we see in OECD countries. Argentina is an exception with a gap of around 15% of a standard deviation (PISA is standardized to have a standard deviation of 100). The gaps tend to be larger in UMI countries - above 10% of a standard deviation in most and as high as 20% in Colombia.

In contrast to the patterns we see for math, girls outperform boys in PISA reading assessment in most LAC countries (Figure 12). These gender gaps tend to be larger than the ones in math in both HI and UMI countries, reaching as high as nearly a third of a standard deviation in the Dominican Republic. This is also similar to what is seen in OECD countries, where on average girls outperform boys on the PISA reading assessment by 30% of a standard deviation.

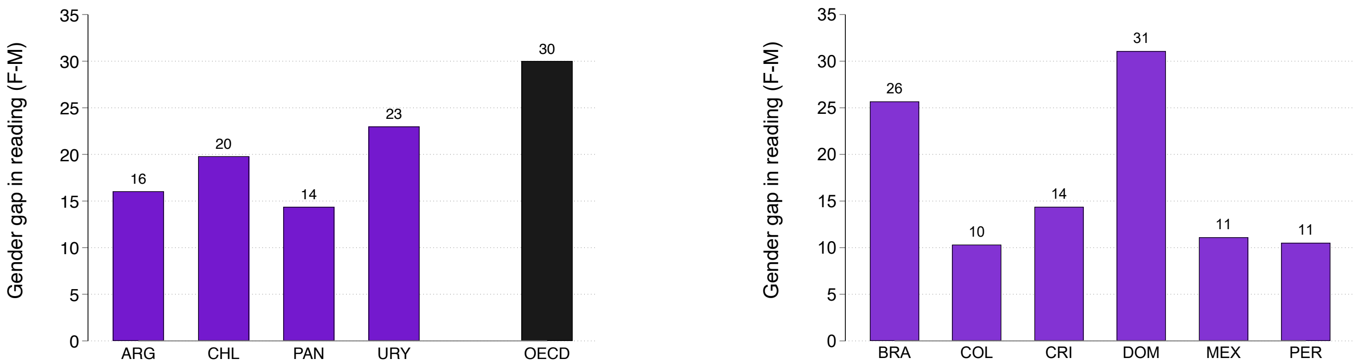
Figure 11: Gender Gaps in Pisa Scores in Math in 2018 (F-M)



(a) High income **(b)** Upper middle income

Note: The figure shows the gender gaps (F-M) in math scores in 2018, for 15 years old children. The test score scale has a standard deviation of 100 points. We use boy's scores as the base from which these differences are expressed: 387 Argentina, 421 Chile, 357 Panama, 422 Uruguay, 388 Brazil, 401 Colombia, 411 Costa Rica, 324 Dominican Republic, 415 Mexico, 408 Peru. The OECD average bar shows unweighted means. *Source*: authors' own calculations based on PISA 2018 (Program for International Student Assessment, OECD).

Figure 12: Gender Gaps in Pisa Scores in Reading in 2018 (F-M)



(a) High income **(b)** Upper middle income

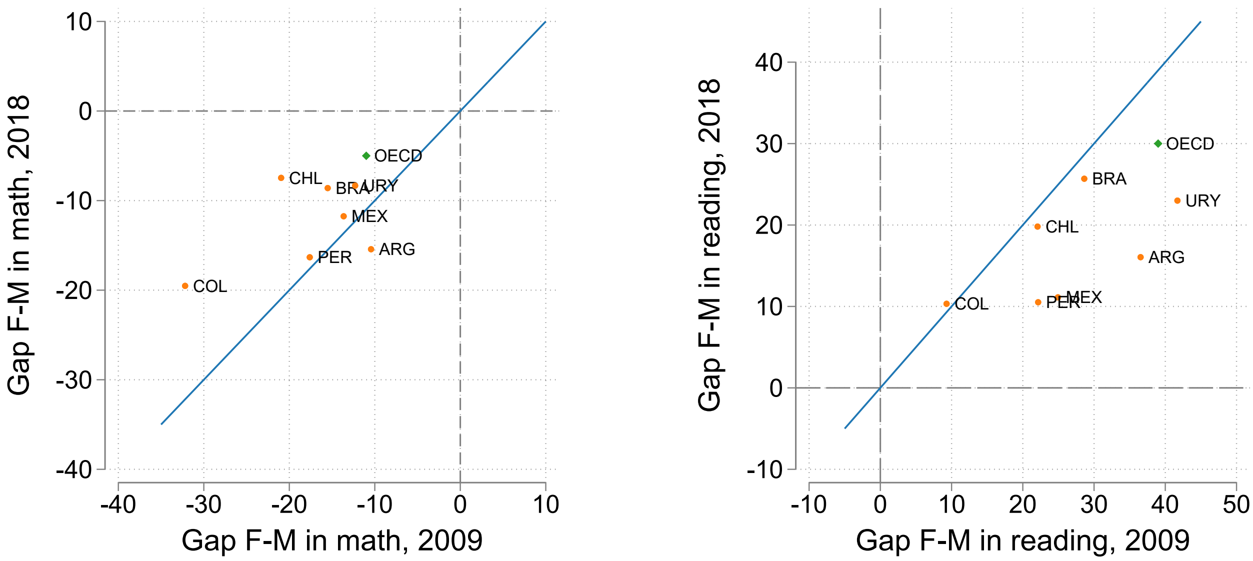
Note: The figure shows the gender gaps (F-M) in reading scores in 2018, for 15 years old children. The test score scale has a standard deviation of 100 points. We use boy's scores as the base from which these differences are expressed: 393 Argentina, 442 Chile, 370 Panama, 415 Uruguay, 400 Brazil, 407 Colombia, 419 Costa Rica, 326 Dominican Republic, 415 Mexico, 395 Peru. The OECD average bar shows unweighted means. *Source*: authors' own calculations based on PISA 2018 (Program for International Student Assessment, OECD).

Figures 13a and 13b show the changes in the gender gaps in math and reading PISA scores between 2009 and 2018 for those countries for which data is available for both years. In Figure 13a the gaps are negative in both periods, indicating that boys outperformed girls in math in both years. As all points (other than Argentina) lie above the 45-degree line, they indicate a decrease in the gap, i.e., the average performance of girls relative to boys has improved over time. This is most evident in Colombia and Chile where the math gender gap shrunk by over 10 points (10% of a standard deviation). OECD countries also narrowed their math gender gap over the same time period. Argentina is an exception, with the gender gap in math widening over this time period.

While girls are catching up with boys in math, boys are catching up with girls in reading. Figure 13b shows changes in reading gender gaps. These are positive in both periods indicating a persistent girl advantage over that time-span. However, all of the points are on or below the 45 degree line, showing that the female advantage in reading either remained constant or shrunk in all seven countries for which data are available, as in the OECD. Furthermore, the catch up in reading was, on average, of a larger magnitude than the catch-up in math; in four out of the seven countries in the analysis the reading gap shrunk by 12-20% of a standard deviation.

Overall the picture over time appears to be one in which gender gaps are shrinking in both math and reading, but boys have decreased their disadvantage in reading more than girls have in math in absolute terms as well as relative to the size of the gap that existed.

Figure 13: Change in Gender Gaps in PISA Scores, 2009-2018



(a) Math **(b)** Reading

Note: The figure shows changes in test score gender gaps (F-M) between 2009 and 2018. The test score scale has a standard deviation of 100 points. LAC countries are in orange and the OECD average is in green. *Source*: authors' own calculations based on PISA 2009, 2018.

2.2.3 Higher Education

We do not have cross-country measures of achievement in higher education in Latin America. We can, however, examine gender differences in the choice of field of study. To do this we use data available from Our World in Data to document the female shares of graduates across main fields of study.[3]

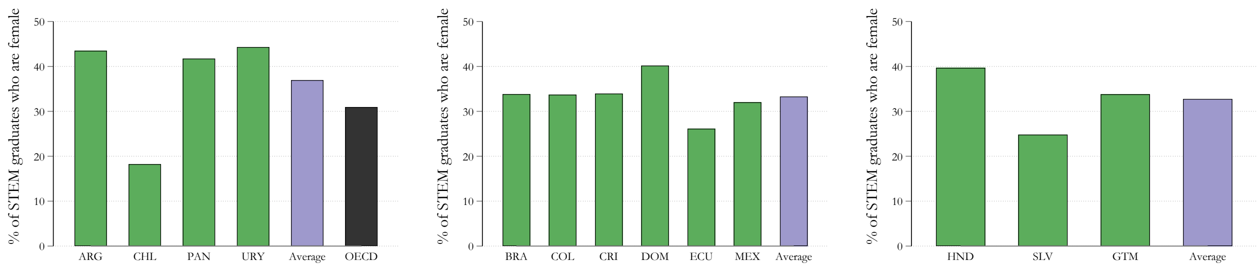
Figure 14 considers Science, Technology, Engineering, and Mathematics (STEM) subjects only and shows the female proportion of STEM graduates by country. As in many countries around the world, across the region women make up the minority of STEM graduates. Chile stands out as the country with by far the lowest proportion of women graduates in STEM, at around 18%, especially compared to

[3]See Our World in Data.

the other three HI countries in this analysis where this proportion is between 40 and 45%. This figure compares favorably with the OECD average of 31%. Across the majority of UMI and LMI countries, women make up between a third to two-fifths of STEM graduates.[4]

A more general analysis of female representation across all fields of study (presented in Appendix Figures A.1, A.2, and A.3) shows that, throughout the region. Education and Health stand out as the two fields of study where women are consistently over-represented, making up between 70 and 80% of the graduates across all of the countries included in the analysis.

Figure 14: Female Share of STEM Graduates



High income | Upper middle income | Low middle income

Note: The figure shows the female share of STEM graduates. The OECD average bar shows unweighted means. *Source*: Our World In Data. Argentina (2013), Brazil (2014), Chile (2014), Colombia (2014), Dominican Republic (2014), Ecuador (2013), El Salvador (2014), Guatemala (2007), Honduras (2014), Mexico (2012), Panama (2013) and Uruguay (2010).

2.2.4 Adult Skills

Lastly, we examine measures of skills in adulthood which capture skills accumulated through the entire education system as well as subsequent work experience. This data was collected by the Development Bank of Latin America (CAF) in 2015 for representative samples of individuals age 15-55 in capital cities of 10 Latin American countries. The survey included assessments of several dimensions of adult skills. Here we examine gender differences in measures of intelligence, verbal skills, and numerical skills. Further details about the data and assessments used in the analysis can be found in Appendix B.5.

Figure 15 shows, for each gender, the percent of a standard deviation by which the group on average scores differently than the mean for that variable. Each variable is standardized with a mean of 0 and a standard deviation equal to 1 where the standardization was done using the entire CAF sample of the 10 major cities of the 9 countries depicted (but which also included Venezuela which is not present in our analysis). Thus, the numbers in the figures should be read as the percentage of one standard deviation by which the average score for that gender in the specific country is different from the mean of the entire cross-country sample.[5] Figure 15a shows standardized scores in the Ravens fluid intelligence assessment. In seven out of nine countries included in this analysis, men outperform women in this assessment but this difference is statistically significantly different from zero only in Bolivia, Brazil and Peru.[6] The largest gaps are in Peru and Bolivia, where they are 16 and 21% of a standard deviation, respectively.[7] The exceptions are two countries in the HI group - Argentina and Uruguay - where on

[4]The under-representation of women in STEM occupations is shown in figure 20.

[5]The analysis presented here excludes Venezuela and we restrict our analysis to individuals of age 25-55 years old whereas the CAF sample also included individuals age 15-24.

[6]See Table A.9 in the Appendix for a full analysis.

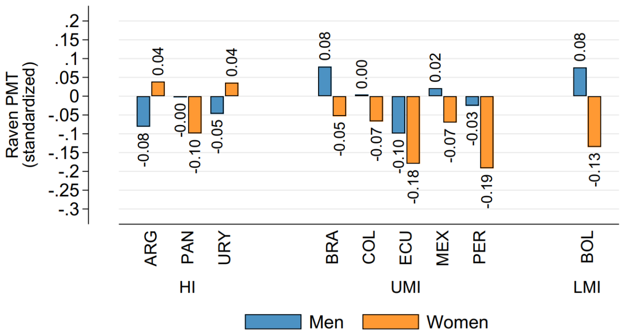
[7]The number for the gender gap is obtained via subtraction (F-M), e.g., the gender gap for Peru is -.19 - -.03 = -.16

average women score slightly higher than men, although again these differences are not statistically significant at conventional levels.

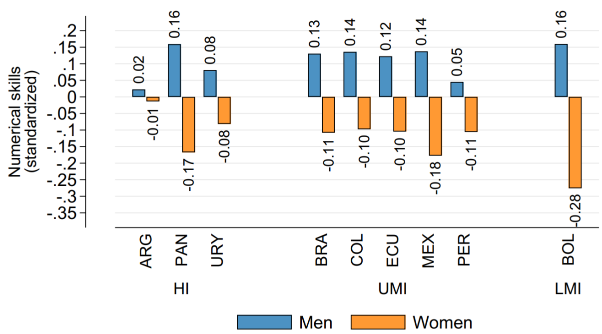
The gender gap in math, already evident in the PISA math scores at age 15, is also present among adults across most of the countries in the region as shown in Figure 15b for the CAF assessment of numerical skills. While the largest gap in the math PISA scores was around a fifth of a standard deviation (Figure 11), among adults the gap in numerical skills are 44% of a standard deviation in Bolivia, 33% for Panama, and 32% for Mexico. These gender gaps are statistically significant in all but one of the countries included in CAF; the exception is Argentina - despite being the country with the largest math gender gap among HI countries in the PISA test.

The most pronounced gender gaps in PISA scores (age 15) are in reading and favors girls (Figure 12). Among adults, however, the pattern is less clear-cut (Figure 15c). In most countries women do a bit less well than men in the CAF verbal conceptualization assessment, although the difference is statistically significant only in Bolivia, Colombia and Mexico. Again Bolivia stands out as the country with the largest gap in favor of men (41% of a standard deviation). Overall, a consistent pattern is that women perform significantly worse than men in Bolivia, though the lack of data does not allow us to assess if this would be true for for other LMI countries as well. At the other end of the spectrum, Argentina is distinguished by its low levels of gender inequality in adult skills.

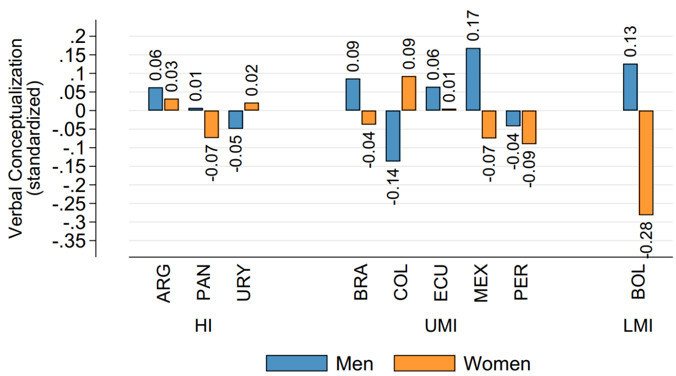
Figure 15: Adult's Skills



(a) RAVEN Index



(b) Numerical Skills



(c) Verbal Conceptualization

Note: The figure shows the gender gaps in three measures of skills in adulthood, computed for individuals aged 25 to 55 years old in 2015. Each variable is standardized (mean of 0 and a standard deviation equal to 1). The standardization was done using the entire sample (ages 15 to 55 and the 10 major cities of the 9 countries depicted plus Venezuela). *Source*: authors' own calculations based on ECAF 2015 (CAF-development bank of Latin America).

2.3 The Gender Gap in Self Confidence and Expectations

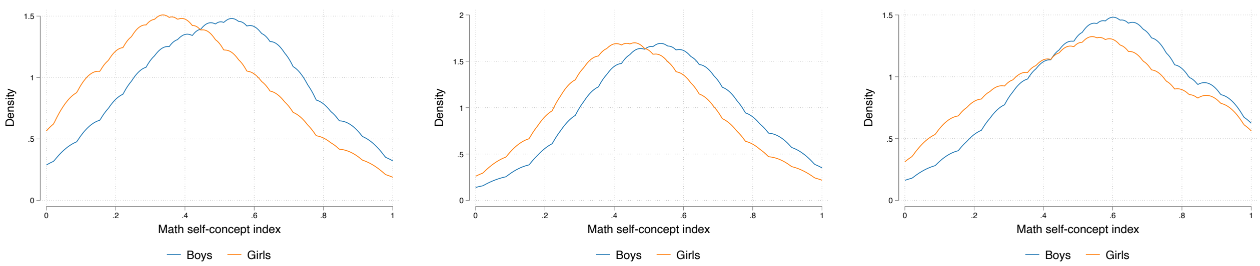
How does the gender gap in mathematics relate to each gender's perception of their ability in that field? Several studies, using different country data-sets, find that math self-perception is strongly and positively associated with subsequent achievement in math at all levels of the achievement distribution, even controlling for earlier attainment in math and various child characteristics (Marsh and Martin, 2011; Susperreguy et al., 2018). We use PISA data to examine whether there is evidence of gender differences in math self-perception and ask whether this perception is correct relative to performance.

In the 2012 round of PISA, students were asked to indicate how strongly they agreed with five statements relating to their math competence.[8] The statements included the following:

- I am good at mathematics.
- I get good grades in mathematics.
- I learn mathematics quickly.
- I have always believed that mathematics is one of my best subjects.
- In my mathematics class, I understand even the most difficult work.

The possible answers to these questions are: "very confident", "confident", "a little confident", and "not confident at all". We code the response of "not confident at all" as zero, "a little confident" as one, "confident" as two, and "very confident" as three. We use an individual's responses to construct a math self-perception index by summing over the response scores and dividing that sum by 3x5=15. This results in an index with a minimum value of zero and a maximum value of one. Figure 16 shows the distribution of the math self-perception index separately for boys and girls. In both HI and UMI countries it is clear that across the distribution, boys have higher math self-perception than girls. This is consistent with trends we see in the US and is not surprising given that, as discussed previously and can be seen in Figure 17, boys at this age outperform girls in math.

Figure 16: Math Self-concept Index Distribution

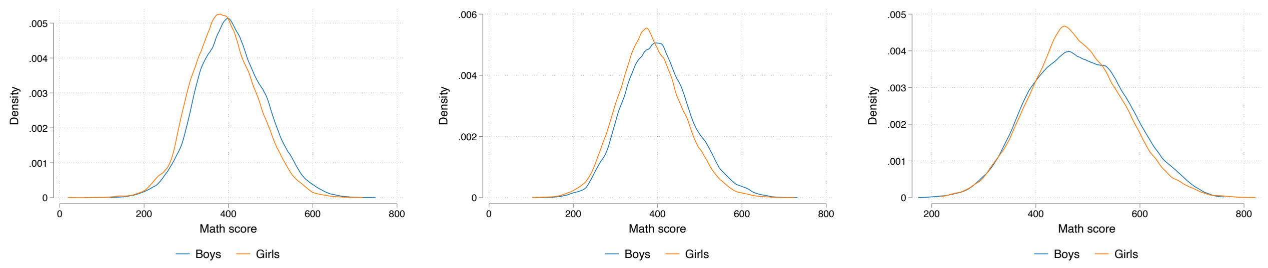


(a) High income **(b)** Upper middle income **(c)** United States

Note: The figure shows, by gender, the distribution of the math self-perception index. The index is constructed based on each student's responses to five questions related to their math competence, as defined in the text. The density function is obtained by pooling individual responses for all countries in the corresponding income group. Individual weights are reweighted to give equal weight to all nations in the same income group. *Source*: authors' own calculations based on PISA 2012.

[8]For more details about the surveys, see Appendix, Section B.3.

Figure 17: Math Score Distribution

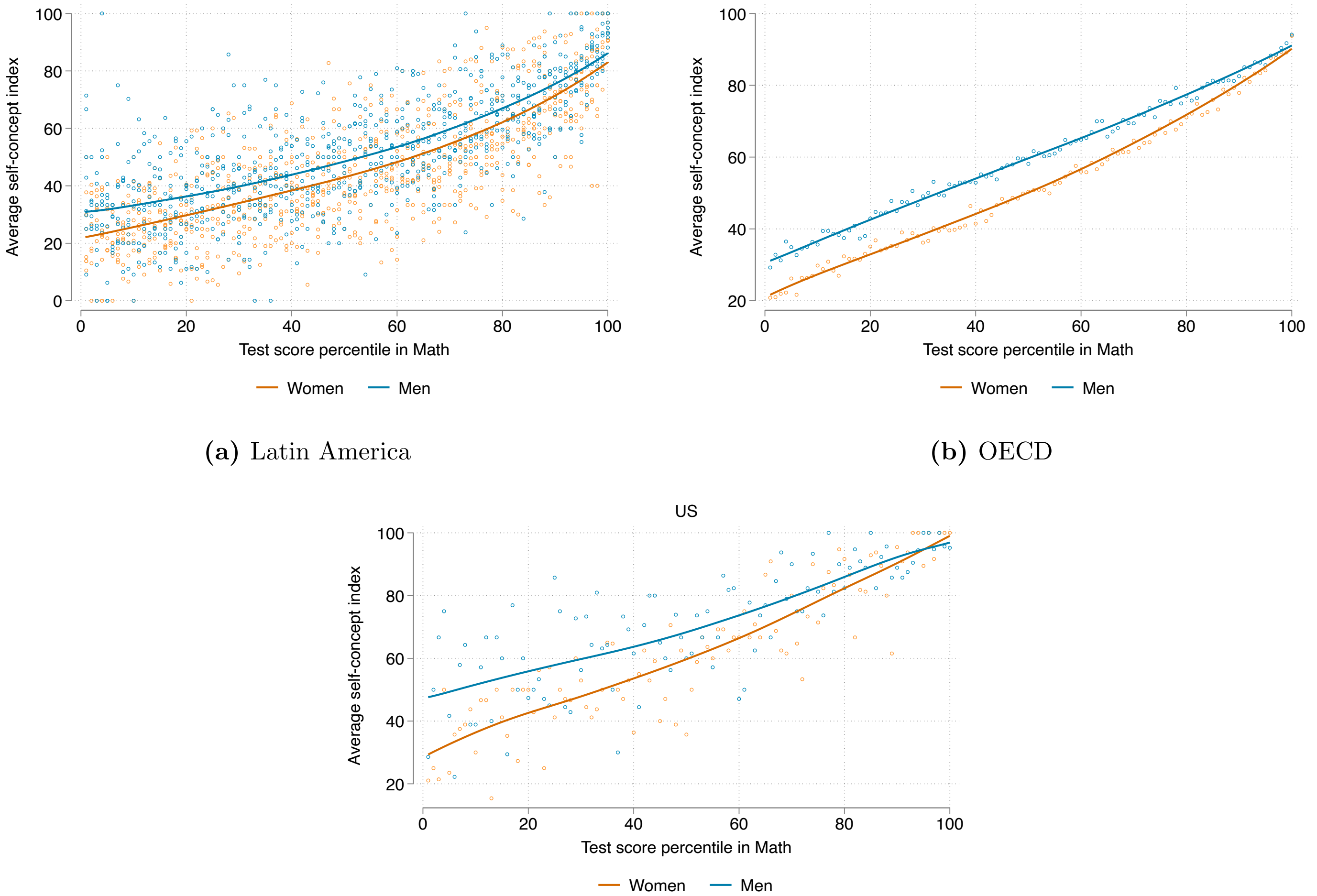


(a) High income **(b)** Upper middle income **(c)** United States

Note: The figure shows, by gender, the distribution of the PISA math test score for the LAC countries in the sample in (a), the OECD countries in (b), and the US in (c). The standard deviation of the test score distribution is 100 points. The density function is obtained by pooling individual responses for all countries in the corresponding income group. Individual weights are reweighted to give equal weight to all nations in the same income group. *Source*: authors' own calculations based on PISA 2012.

However, Figure 18a suggests that the math self-perception of girls is lower than that of boys even *conditional* on actual performance in mathematics. This figure plots the average self-perception index for each percentile of the PISA score separately for boys and girls for each country. Thus, each dot represents a cell defined by country, gender, and percentile of the PISA math score. The orange points (girls) tend to be below the blue points (boys) indicating that for each percentile of the score in PISA mathematics assessment, on average girls have lower math self-perception than boys across the region. This trend is highlighted by the line of best fit for girls being below than for boys (Lowess regression curves). Regression analysis further confirms that these differences are statistically significant. Appendix Table A.10 shows the results of regressing the math self-concept score on the math PISA score, a female dummy, and the interaction between the two for the whole of the region as well as for each of the countries separately. With the exception of Peru, in all LA countries the sum of the female dummy and the interaction effect is negative and statistically significant across the entire math score distribution. The positive coefficient on the interaction term, which is significant in the specification which pools all of the countries (column 1), further indicates that the gender gap in self-perception is narrower at higher levels of attainment. This can be seen in Figure 18a panel a: at the bottom of the PISA math score distribution on average there is roughly a 10 point gender gap (equivalent to 21% of the mean), while among the highest achievers this gap is less than half that number. A notable outlier in this analysis is Peru where the coefficient on the interaction is negative and statistically significant (Table A.10, Col 8), suggesting that the self-perception gender gap widens rather than narrows at higher match achievement levels.

Figure 18: Math self-perception by percentile of PISA mathematics score distribution



(a) Latin America

(b) OECD

(c) United States

Note: The figure graphs the average math self-perception index (as defined in the text) against each percentile of the PISA score distribution (x-axis). The relationship is shown separately for boys (blue) and girls (orange) by country in LAC (Figure a), by country in the OECD (Figure b), and for the US (Figure c). Each dot in Figure (a) represents a cell defined by country, gender, and percentile of the PISA math score. The blue and orange lines depict the Lowess regression curves illustrating the relationships between the self-perception index and the PISA score percentile for boys and girls, respectively.

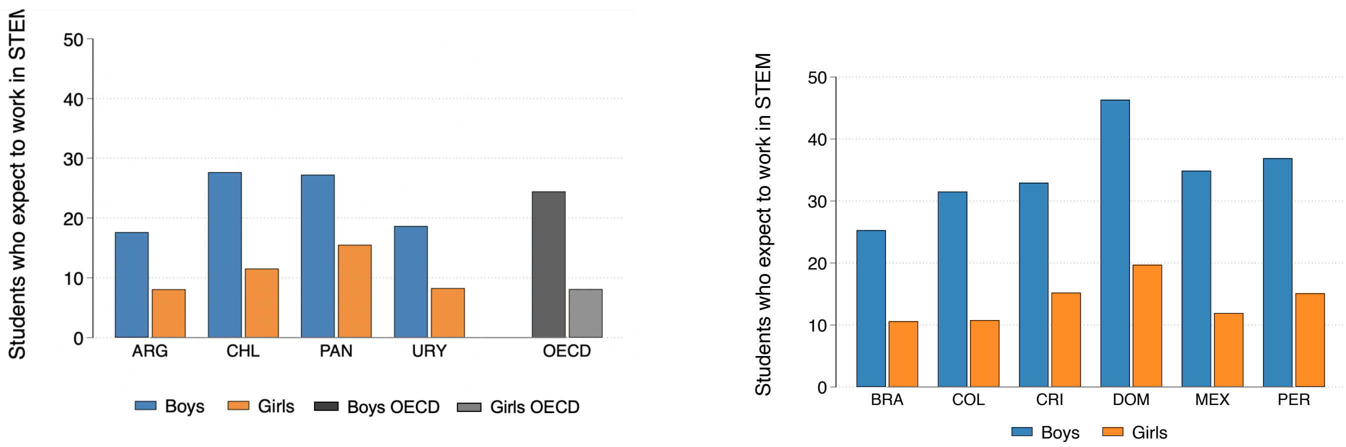
How do these patterns compare to those of other countries? Figure 18 shows scatter plots for OECD and the US. It suggests that the pattern observed in LA countries is similar to those in the US and OECD where we also see lower math self-concept among girls across most of the math test score distribution and with the gender gap in confidence declining significantly at higher levels of attainment and disappearing at the very top.

Self-perceptions of secondary school students may affect outcomes not only through impacts on achievement but also by shaping young people's expectations. A growing literature shows that expectations play a key role in shaping key educational and career choices (Elsner and Isphording, 2017; Wiswall and Zafar, 2021). PISA data contains information on pupils' occupational expectations, which we now turn to.

Figure 19 shows gender gaps in the share of 15 year-old students who report that they expect to work in a STEM occupation at age 30 (which includes working in science, engineering, and information and communication technology). Across the LA countries included in PISA, only a small minority of girls (between around 10 and 20% in most countries) report that they expect to work in a STEM-related occupation. Boys are more than twice as likely as girls to report this expectation. A similar expectations gender gap exist in OECD countries. The gender gap in expectations is especially large in UMI countries; for example in Colombia, Mexico, and Peru boys are around three times more likely to report that they expect to work in a STEM occupation than girls.

How correlated might these expectations be with future occupation choices? In Figure 20 we use CEDLAS household survey data from 2018 to document gender gaps in actual proportions of young workers (age 30-40) working in STEM occupations in 2018 in the countries included in PISA. The results indicate that the pattern of proportions of 30-40 year old women working in STEM occupations is broadly similar to that in expectations to work in STEM around the same period. As in the expectations data, the proportion of women working in STEM does not exceed about a fifth of working women in this age group, while the proportion of men is 2-3 times larger in many countries. Furthermore, the countries where the expectations gender gap is largest, such as Chile, Colombia, Peru, and Mexico are also the countries where the gender gap in STEM occupations is largest.

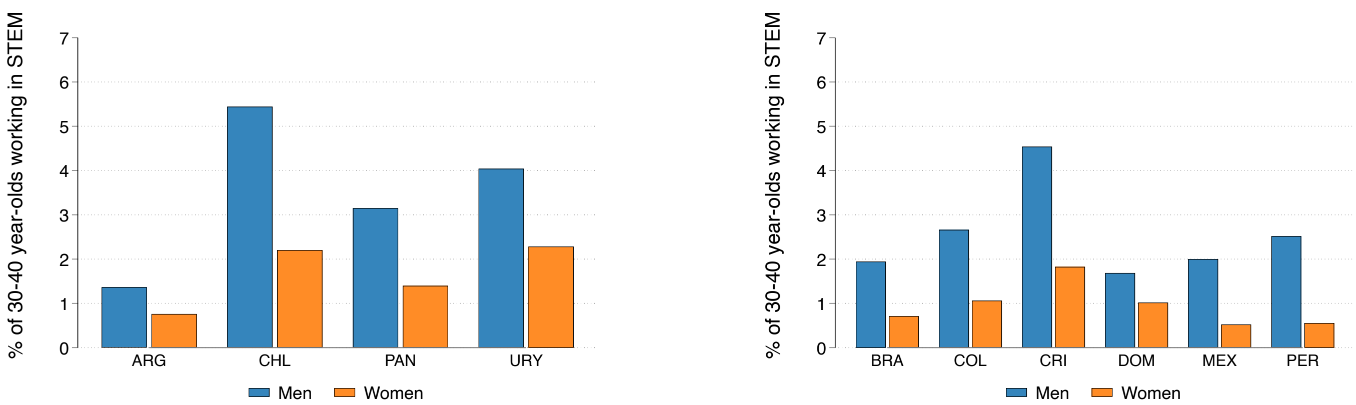
Figure 19: Expectations: Work in STEM-related Occupations



(a) High income **(b)** Upper middle income

Note: The figure shows the share of 15 year old students (PISA) who expect to work in a STEM-related occupation at the age of 30. The OECD average shows unweighted means. *Source*: authors' own calculations based on PISA 2018.

Figure 20: Adults Working in STEM-related Occupations

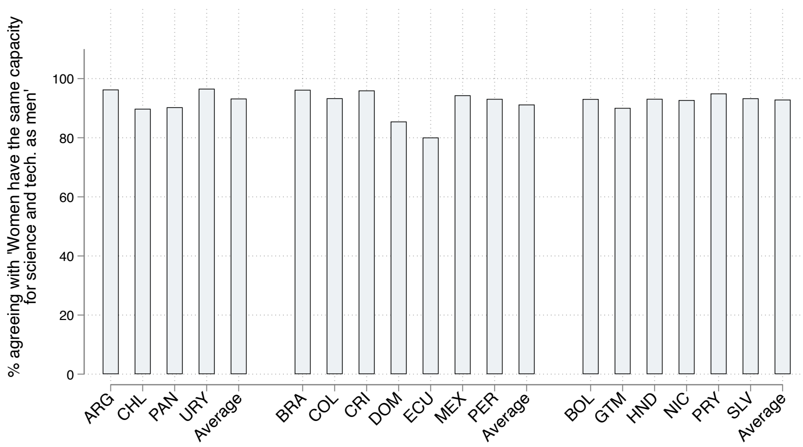


(a) High income **(b)** Upper middle income

Note: The figure shows the share of the employed population aged 30-40 years old who work in a STEM-related occupation. The year used in the calculations is 2018 (2017 for Chile). *Source*: authors' own calculations based on household surveys (GenLAC).

Despite the pronounced gender gaps in math self-concept and expectations to work in STEM occupations, as well as actual patterns of work on STEM occupations among adults, there is widespread agreement in LA countries that women and men have the same *capacity for* science and technology. Using data from Latinobarometro, Figure 21 shows that across the region in 2018 in the majority of countries, over 90% of respondents agreed or strongly agreed with the statement that "Women have the same capacity for science and technology as men." The Dominican Republic and Ecuador have the lowest levels of agreement in the region but even here the agreement rate is around 80%. Figure 22 further shows that this high level of agreement extends to both women and men with only small gender differences. There is also little evidence of systematic differences in this view either by education or age cohort - differences across these groups are small and do not follow a distinctive pattern (see Figure A.4 in Appendix).

Figure 21: Women have the same capacity for science and technology as men



Note: Individuals age 25-55 years old. This figure shows the percentage of individuals who agree or strongly agree with the statement 'Women have the same capacity for science and technology as men.' The bars show unweighted means. *Source*: authors' own calculations based on Latinobarometro, 2018.

3 Work

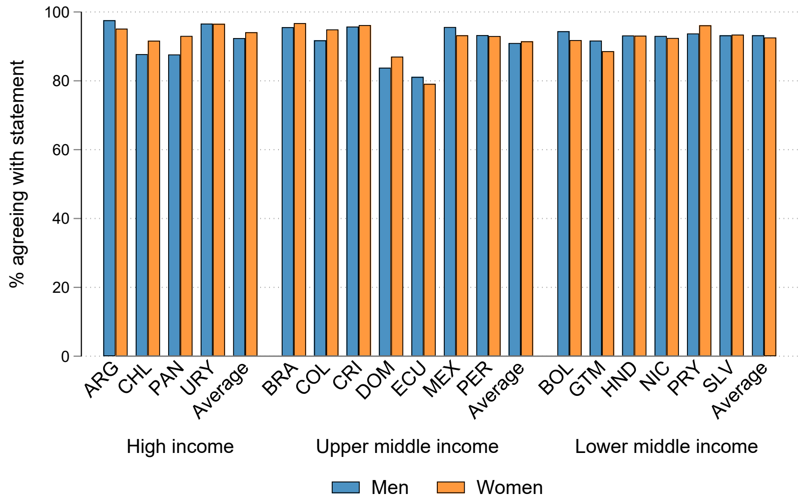
This section focuses on gender inequalities in the work sphere, including in labor force participation, employment structure, and wages. As in the prior section, we primarily utilize GenLAC–CEDLAS harmonized microdata from national household surveys and study both the current state as well as the evolution of trends over the last 20 years. We benchmark our analysis against several comparators outside of Latin America, including the US and, for some indicators, France, Indonesia, and Spain.[9] We also assess how gender inequalities in the work sphere differ by education and how the presence of children affects women and men differentially.

3.1 Labor Force Participation

Across all countries in LAC, over 90% of men between the ages of 25 and 55 were economically active, i.e. either working or actively looking for work in 2019 (Figure 23). As in the rest of the world, the

[9]These countries were chosen for a variety of reasons. Spain because of its ex-colonial status in LAC, France as an OECD country, and Indonesia to provide comparison as a lower-income country outside LAC.

Figure 22: Women have the same capacity for science and technology as men: % of individuals agreeing, by gender



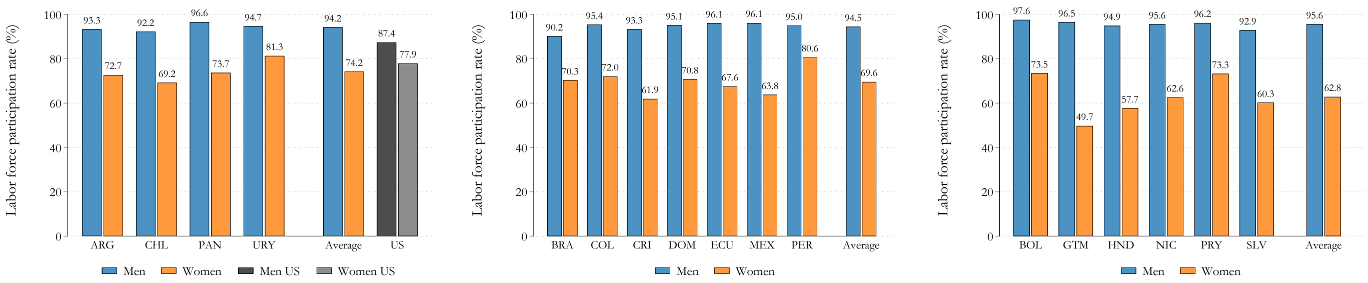
Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who agree or strongly agree with the statement 'Women have the same capacity for science and technology as men.' The average bars show unweighted means. *Source*: authors' own calculations based on Latinobarometro, 2018.

proportion of women in this category is significantly smaller (Chioda and Verdú, 2016; Gasparini et al., 2015; World Bank, 2011), ranging between an average of 63% in the LMI countries and 74% in the HI countries in the region. Comparing these rates to the U.S. we see that while in the great majority of LA countries, including those in the HI group, female labor force participation rates (FLFP) are lower than that in the US, LFP among men is notably higher. As a result there is a larger LFP gender gap throughout the region than in the US.

There has been a large increase in FLFP over the last 20 years, especially in the HI and UMI countries in the region (Figure 24a), although at a lower rate than during the 1990s (Marchionni et al., 2019). Since LFP among men has remained constant over the last 20 years, this has resulted in significant shrinking of the LFP gender gap, particularly in the HI and UMI countries in the region where, on average, the gap has shrunk by 10 percentage points compared to the 5 percentage points decrease in LMI countries. In the US, on the other hand, the change has been much smaller (but women started at a higher level) and the gap has narrowed due both to male LFP falling and female LFP rising (Figure 24).

The aggregate patterns mask a significant amount of heterogeneity: across all LAC countries there is a pronounced education gradient in FLFP, with much higher LFP among women with higher education levels. Figure 25 shows how these differ by country and education, comparing LFP across women with incomplete secondary schooling, complete secondary schooling, and complete higher education. This gradient is similar across HI, UMI. and LMI countries in LAC. The average gap of around 25 percentage points between the most and least educated women is comparable in magnitude to the LFP gender gap in HI and UMI countries. It is also comparable to (though slightly lower than) the equivalent gap between less and more educated women in the U.S. The steep education gradient in FLFP is mirrored by a similarly steep education gradient in LFP gender gaps which are above 40 percentage points among the least educated group in the majority of countries, compared to a maximum of 16 percentage points among the most educated group (Figure 26). The similarity in FLFP education gradient between LAC

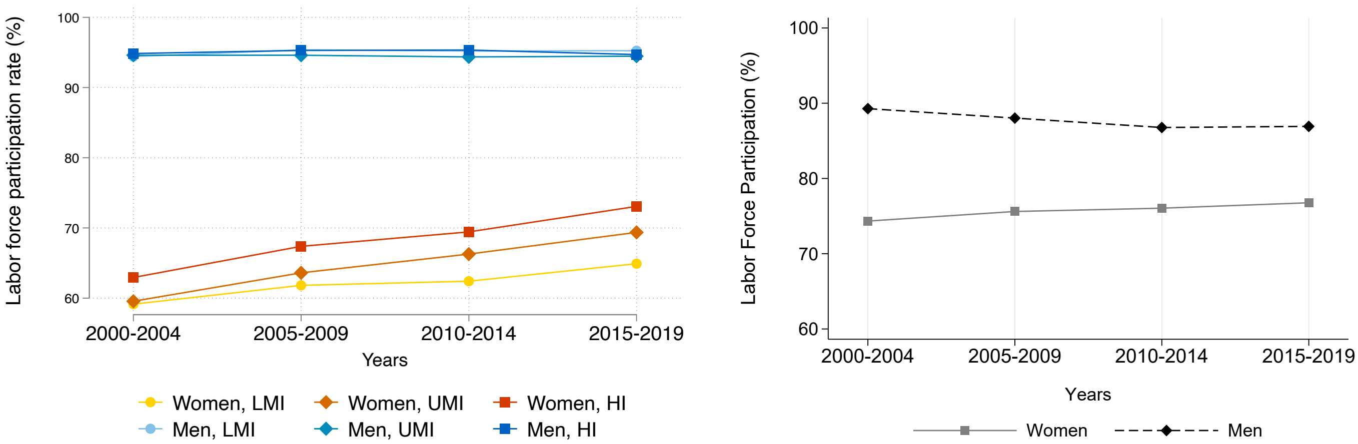
Figure 23: Labor Force Participation in LAC circa 2019



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: This figure shows, by gender, the share of the population aged 25-55 years old that is economically active, as defined in the text. The average bars show unweighted means. *Source*: authors' own calculations based on LAC household surveys (GenLAC) and the American Community Survey. Survey year is 2019 or the latest year available up to 2019 (see Table B.1 in Appendix B).

Figure 24: Evolution of Labor Force Participation in LAC and US



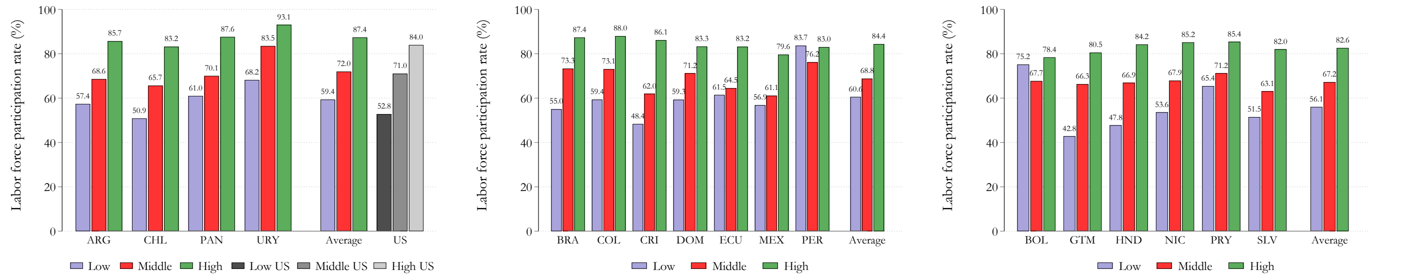
(a) Evolution of Labor Force Participation in LAC **(b)** Evolution of Labor Force Participation in the US

Note: These figures show the evolution of the share of the population aged 25-55 years old that is economically active, as defined in the text. In Panel (a), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (b), each dot represents the 5-year average for the US. *Source*: see note to Figure 23. Only countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries. See Table B.1 in Appendix B).

countries and the US is less evident in the education LFP gender-gap gradient: the difference in the size of the gap between the least and most educated groups is 2-3 times smaller in the US than in most LAC countries. It is interesting to note that at all levels of education, women in HI countries in LAC have higher LFP than women in the US. Thus, the difference in the average LFP stems from fewer women in LAC, on average, obtaining higher levels of education than in the US.

Disaggregating trends in FLFP over the last 20 years by women's education shows that in HI and UMI countries, FLFP increased in all education groups, although slightly faster for women with less than tertiary education, which is as expected given the already high level at the beginning of the period (Figure 27a). For LMI countries, it is notable that LFP has decreased among women with complete secondary schooling: they have gone from having a higher LFP than similarly educated women in LAC 20 years ago to a lower level than these. For the least-educated women (those with incomplete secondary schooling), however, there is a clear positive gradient. In fact, the increase in the rate of

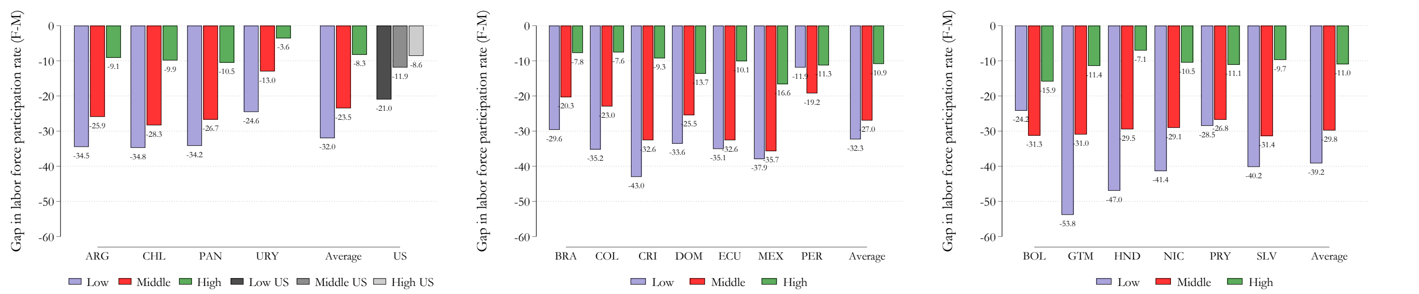
Figure 25: Female Labor Force Participation by Education



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: This figure shows, by education level, the share of the female population aged 25-55 years old that is economically active, as defined in the text. Low refers to less than complete high-school; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: See the note to Figure 23.

Figure 26: Gender Gaps in Labor Force Participation (F-M) by Education



(a) High income **(b)** Upper middle income **(c)** Lower middle income

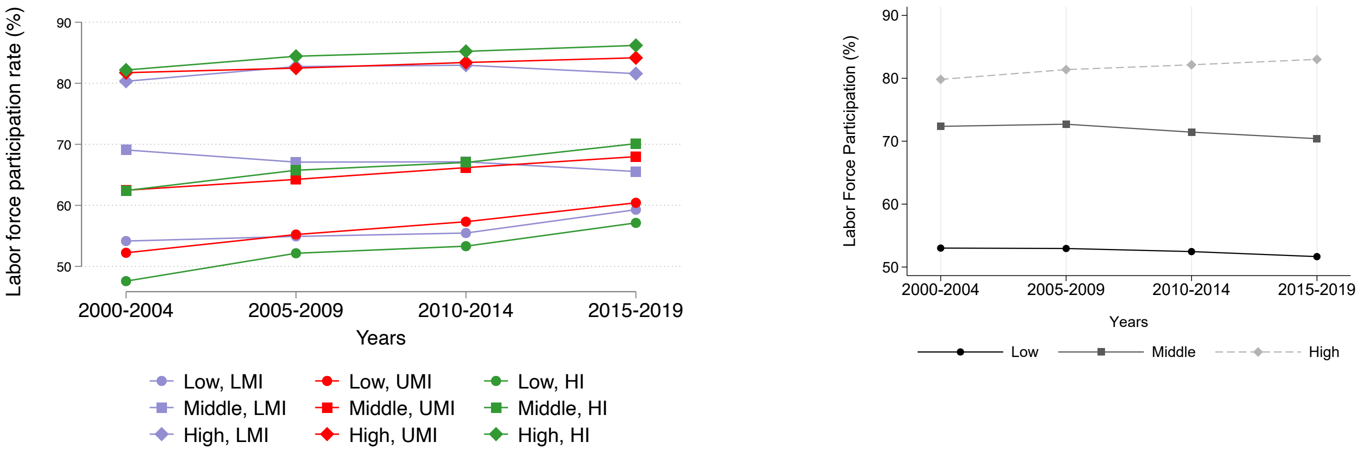
Note: This figure shows, by education level, the gender gap (F-M) in the share of the population aged 25-55 years old that is economically active, as defined in the text. Low refers to less than complete high-school; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: See the note to Figure 23.

FLFP that we see in LMI countries in the last 5 years in Figure 24a is driven entirely by improvements among the least-educated women, compensating for the relatively flat profiles of more educated women. Nevertheless, even among these women the rate of growth is slower than that among least educated women in LAC countries with higher income. This is at odds with the trends in the US over this period, where LFP among the most educated women increases and, if anything, there is a slight decrease among the rest (Figure 27). In fact, while in the early 2000's LFP among the least educated women in LAC and US were comparable, the differential trends over the last 20 years have resulted in a higher LFP in this group even in the poorest LAC countries than in the US.

The analysis above pools women born in different years as each five year period considers women between the ages of 25 and 55. An alternative is to trace out the evolution of labor force participation across the life cycle of different cohorts. Figure 28 shows the life-cycle evolution of LFP for cohorts of women born between 1930 and 1989 in HI countries, pooling women born in the same decade.[10] In line with the findings in Figure 24a, we see a broad pattern of higher LFP for more recent cohorts. For example, in Argentina, LFP for women born in 1980-89 is over 20 percentage points higher than

[10]These figures are constructed using IPUMS data. LFP rates in these data are not necessarily fully comparable to the GenLAC data for all countries which explains the differences in the number of data points for different countries. See Appendix B for more details.

Figure 27: Evolution of Female LFP by Education



(a) Evolution of FLFP in LAC since 2000 by Education Level

(b) Evolution of FLFP in the US since 2000 Split by Education Level

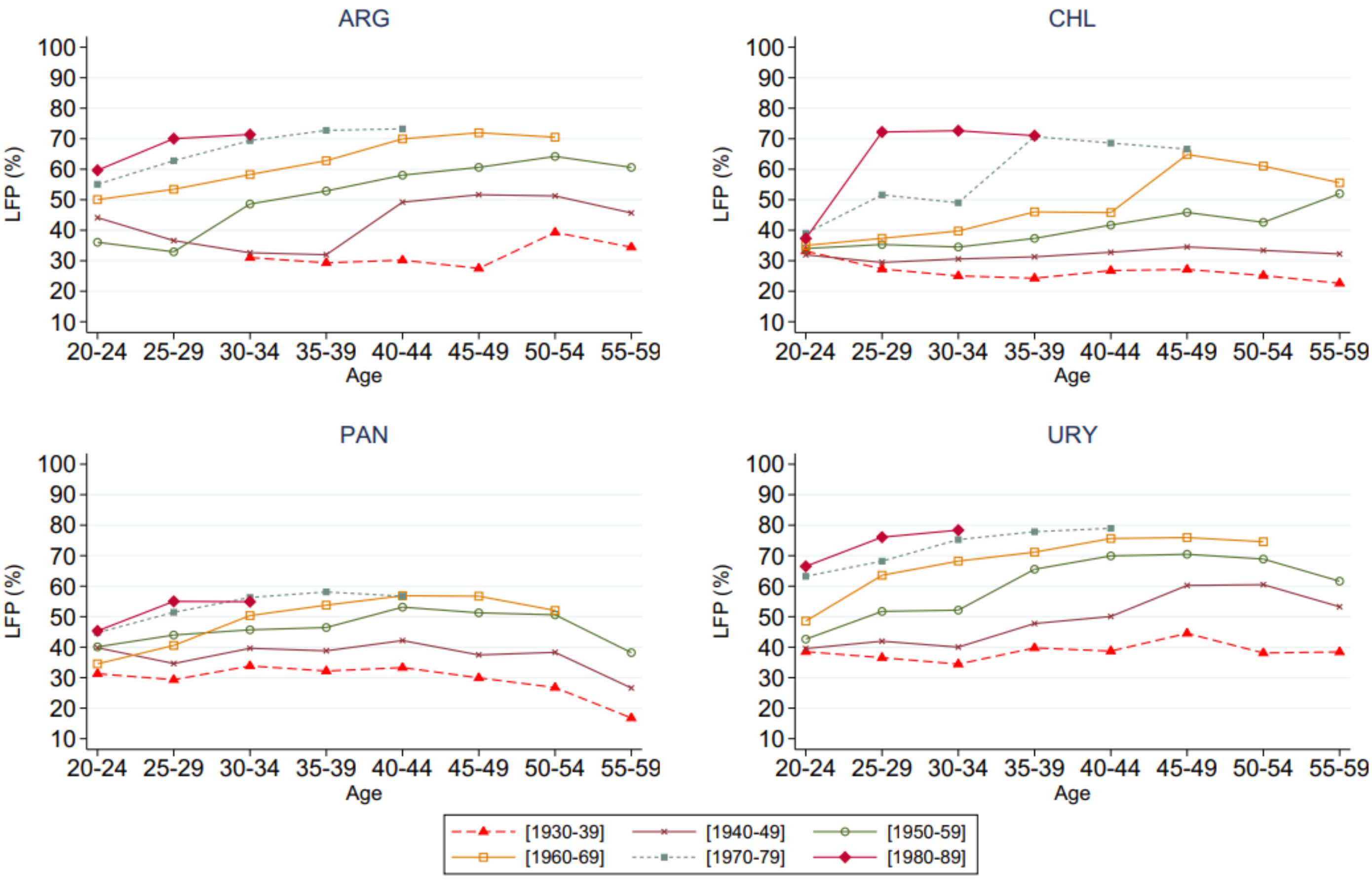
Note: These figures show, by education level, the evolution of the share of the female population aged 25-55 years old that is economically active, as defined in the text. Low refers to less than complete high-school; medium refers to high school graduates without higher education; and high refers to completed tertiary education. In Panel (a), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (b), each dot represents the 5-year average for the US. *Source*: See the note to Figure 24.

that of the 1950-59 cohort at the age of 30-34. The increase in LFP across cohorts is broadly similar across UMI countries, with the exception of Panama where it has been noticeably less pronounced and recently in Chile where the most recent cohort has seen a very large increase in its LFP at young ages, allowing it to catch up to the higher levels reached by Argentina and Uruguay.

Broadly, we see similar trends in the UMI countries as in the HI ones, though starting from much lower FLFP rates in older cohorts (Figure 29). There is some important variation across countries, however, with evidence of larger increases in Brazil, Ecuador, and Dominican Republic than in the other countries. Colombia and Mexico stand out for the very small changes in LFP for younger cohorts and, both in the Dominican Republic and Colombia, there is a a pronounced decrease in FLFP rates among women born in more recent decades.

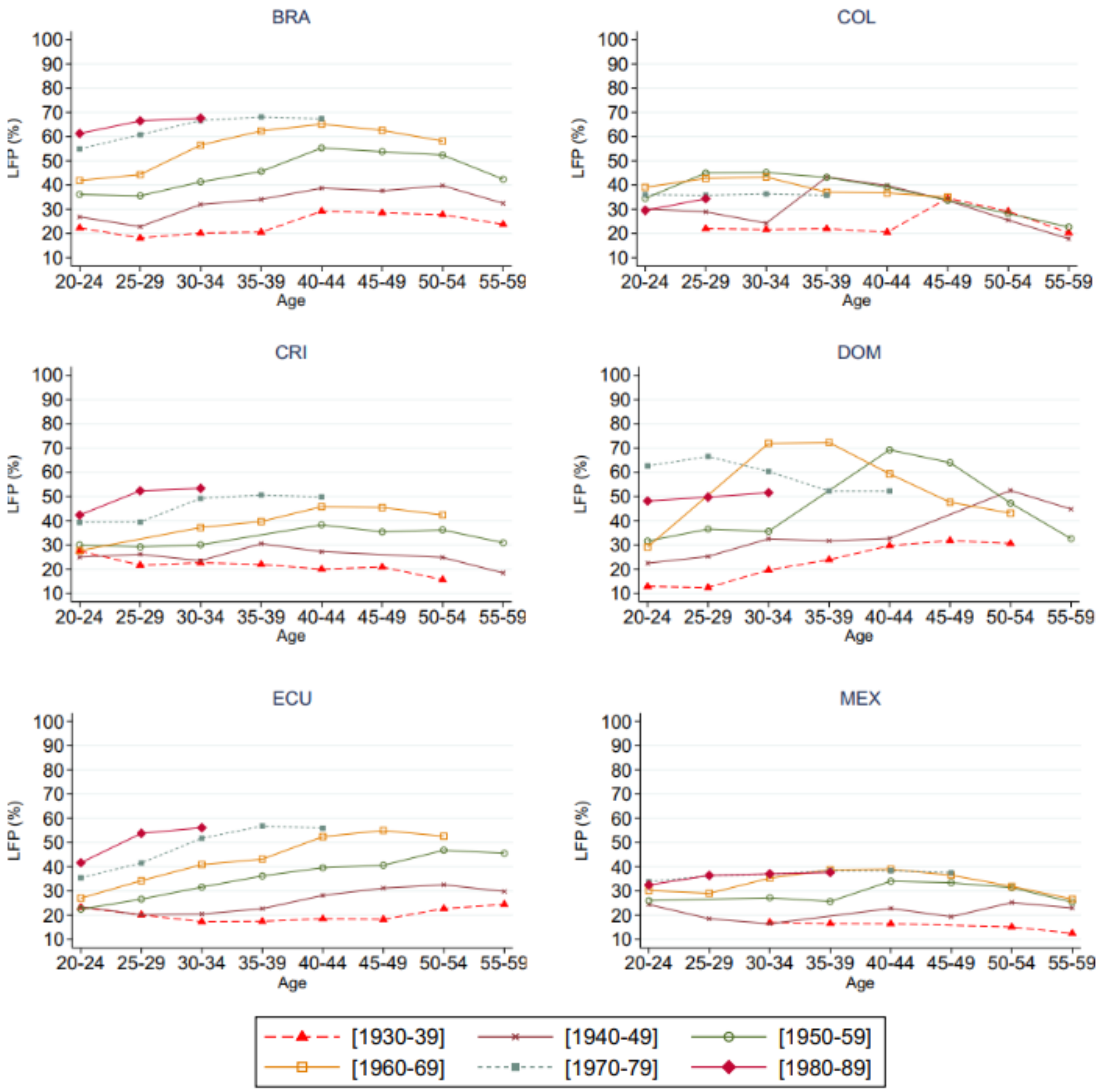
In line with trends in Figure 24a, there has been much less improvement in FLFP across cohorts in the poorest countries in the region (Figure 30), with the marked exception of Bolivia. For example, in Guatemala LFP among those born in 1970s at age 30-34 was 15 percentage points higher than the 1940's cohort; in Brazil and Argentina this gap is 40 percentage points. Honduras, El Salvador, and Nicaragua also stand out for the lack of significant change for the younger cohorts.

Figure 28: Female LFP over the Life Cycle Across Cohorts in High Income Countries



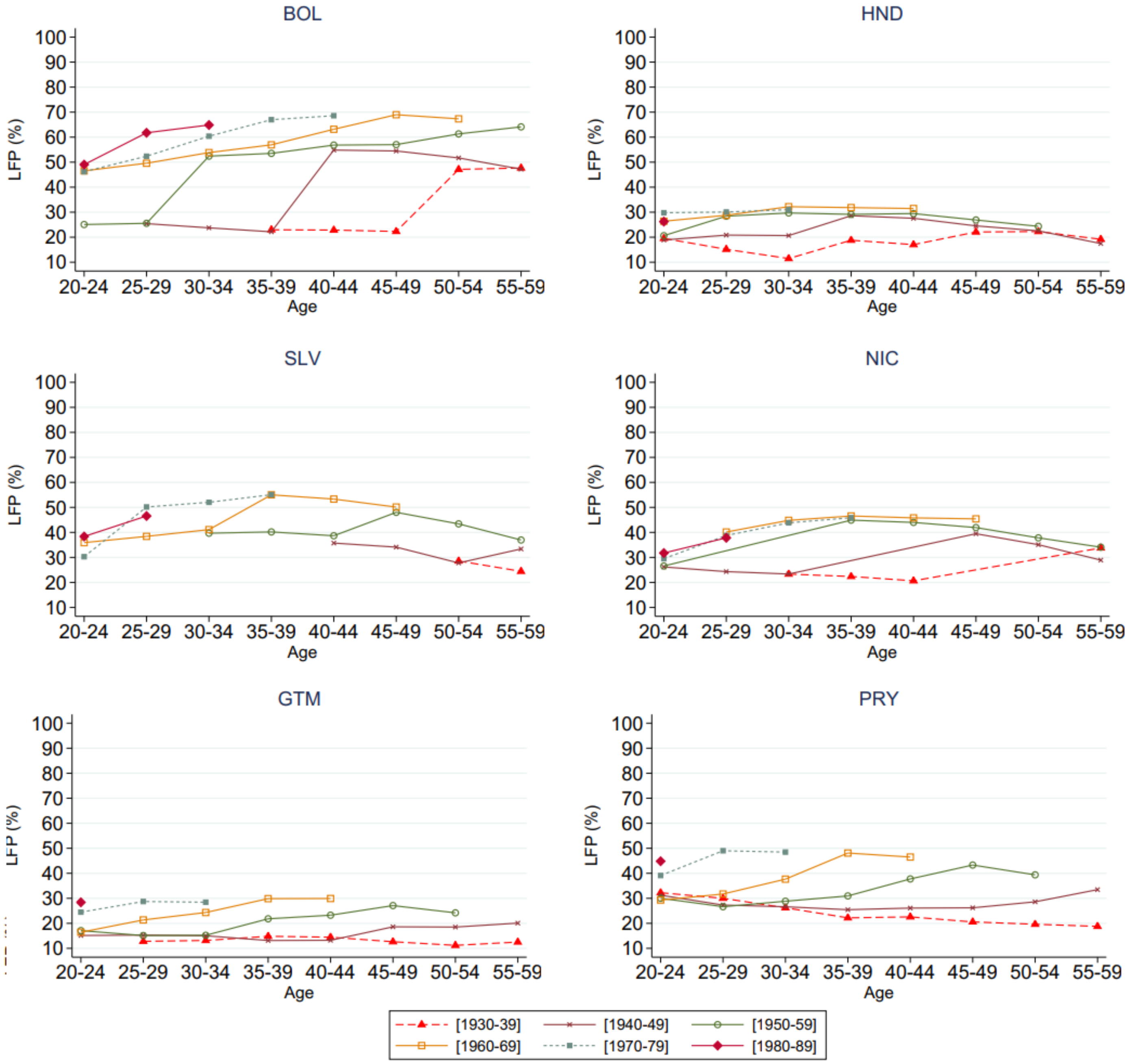
Note: This figure shows the share of the population that is economically active, as defined in the text, over the life cycle and for six different cohorts (individuals born in 1930-39, in 1940-49, in 1950-59, in 1960-69, in 1970-79 and in 1980-89). *Source*: authors' own calculations based on IPUMS International's harmonized census microdata. We use censuses from the 1960s up to the 2010s. The years of the censuses differ by country (see Table B.4 in Appendix Section B.7).

Figure 29: Female LFP over the Life Cycle Across Cohorts in Upper Middle Income Countries



Note: This figure shows the share of the population that is economically active, as defined in the text, over the life cycle and for six different cohorts (individuals born in 1930-39, 1940-49, 1950-59, 1960-69, 1970-79, and 1980-89). *Source*: see note to Figure 28.

Figure 30: Female LFP over the Life Cycle Across Cohorts in Lower Middle Income Countries

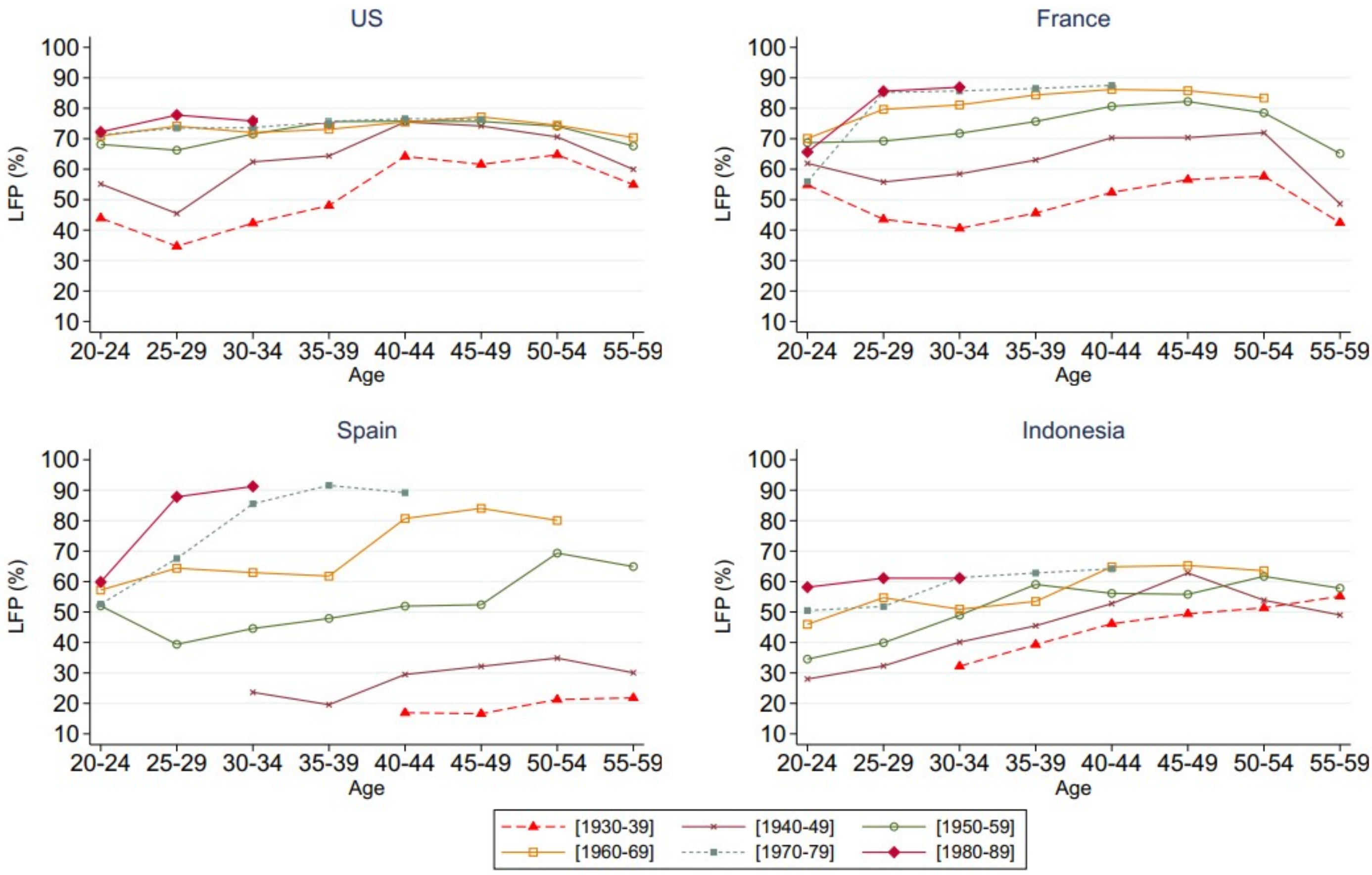


Note: This figure shows the share of the population that is economically active, as defined in the text, over the life cycle and for six different cohorts (individuals born in 1930-39, 1940-49, 1950-59, 1960-69, 1970-79, and in 1980-89). *Source*: see note to Figure 28.

The Appendix shows these trends disaggregated by education (Figures A.5-A.8). Across the region, in most countries FLFP is increasing most for the least educated women, especially in the HI and UMI countries. For example, in Argentina FLFP among least educated women in the 35-39 age group increased by around 35 percentage points between the 1940's and 1970's cohorts, compared to less than 20 percentage points for women in these cohorts with complete secondary education and to 15 percentage points for those with higher education.

How do the trends in LAC countries compare to other countries around the world? Figure 31 shows the evolution of FLFP across cohorts in US, France, Spain and Indonesia. Although FLFP in the US among earlier cohorts was much higher than in any of the LAC countries, the gap between the US and especially HI countries in LAC has shrunk considerably due both to the increase in FLFP in the latter and its stagnation in the US. In contrast, both in France and Spain, FLFP has continued to grow, evidencing a 20 percentage points higher participation rate than even those in highest FLFP LAC countries. The case of Spain is particularly interesting since LFP among the earlier cohorts were comparable to those in some of the poorest LAC countries. Spain then saw larger increases in FLFP between each subsequent cohort than in any other LAC country, overtaking all of them, as well as the US. Lastly, trends in Indonesia look most similar to UMI countries in LAC, such as Costa Rica and Ecuador, where there has been steady but small increases over time.

Figure 31: Female LFP over the Life Cycle Across Cohorts in Comparison Countries



Note: This figure shows the share of the population that is economically active, as defined in the text, over the life cycle and for six different cohorts (individuals born in 1930-39, 1940-49, 1950-59, 1960-69, 1970-79, and in 1980-89). *Source*: see note to Figure 28.

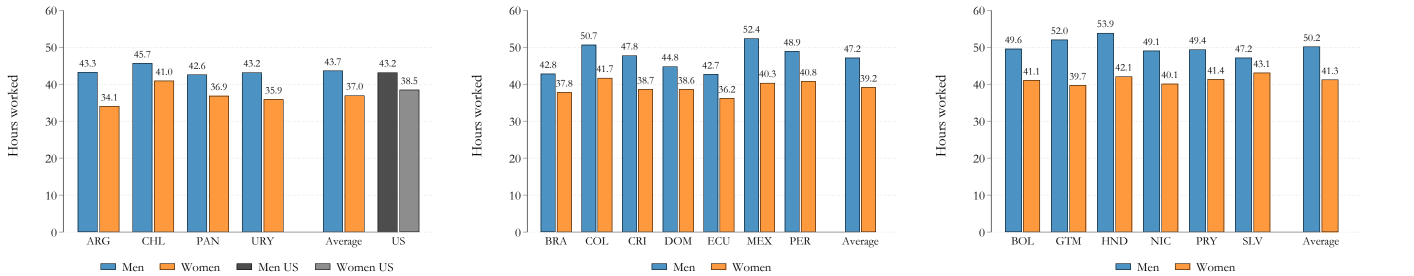
3.2 The Profile of Work

In this section we examine gender gaps in both the intensive margin (time worked) in market work, in work outside the market, as well as whether work is classified as wage employee, employer, unpaid worker, or self-employed. We also examine the gender gap in employment in the formal versus informal sector, an important dimension that correlates with the quality of the job.

3.2.1 Hours worked in the market

Among those age 25-55 who were employed in 2019, on average men work longer hours than women in all LAC countries (Figure 32). There has been a decline in the number of hours worked over the last 20 years (since 2000), for both men and women. This can be seen most starkly for men in UMI and HI countries, where the gender gap in work hours has shrunk slightly as a result (Figure 33a). The gender gaps in the average number of hours worked range from a maximum of 12.3 hours in Guatemala to 4.7 hours in El Salvador. While work hours are on average higher in poorer countries, especially among men, gender gaps are similar in magnitude across poorer and richer LAC countries (Figure 32). On average hours worked and the gender gap in the HI LAC countries is similar to that in the US.

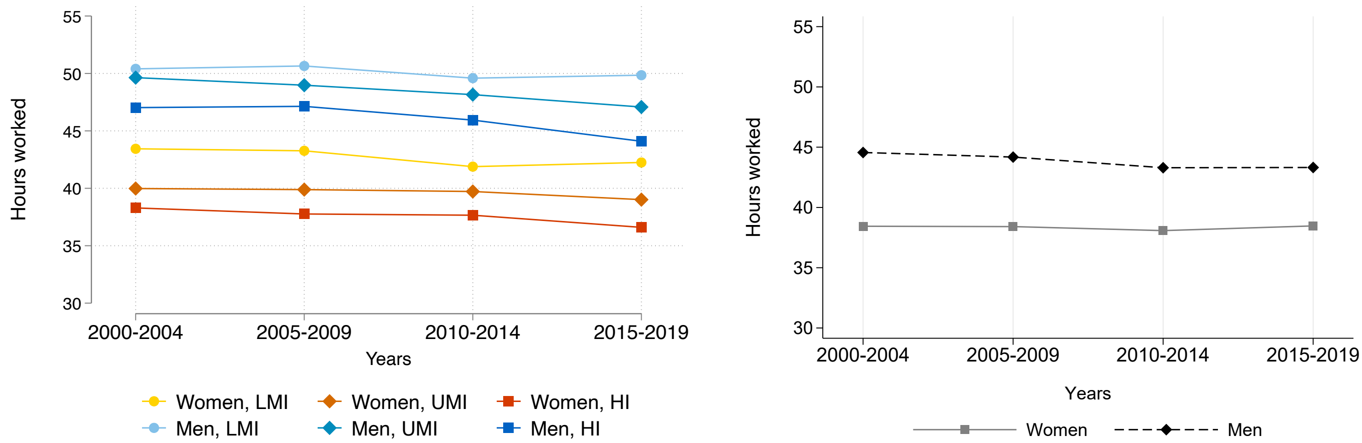
Figure 32: Hours Worked (2019)



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals aged 25-55 years old. The figure shows, by gender, the average weekly number of hours worked in the market, including all jobs. The average bars show unweighted means. *Source*: see note to Figure 23.

Figure 33: Evolution of the Number of Hours Worked

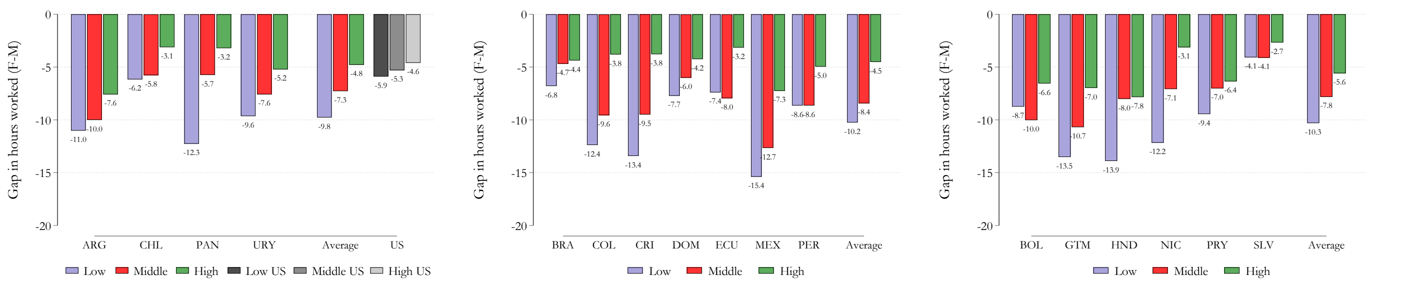


(a) Hours worked per week in LAC by gender **(b)** Hours worked per week in US by gender

Note: Individuals aged 25-55 years old. These figures show the evolution of the average weekly number of hours worked in the market, including all jobs. In Panel (a), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (b), each dot represents the 5-year average for the US. *Source*: see note to Figure 23. Only countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries. See Table B.1 in Appendix B).

As in the case of LFP, there is a steep education gradient in the gender gaps in hours worked: across HI, UMI, and LMI countries, the gender gap in working hours among those with tertiary education is around half of that among those who have not completed high school. This education gradient is steeper than in the US, where the gender gap among the most educated is just over a fifth of that among the least educated group (see Figure 34).

Figure 34: Gender Gaps in the Number of Hours Worked (F-M) by Education



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals aged 25-55 years old. This figure shows, by education level, the gender gap (F-M) in the weekly number of hours worked in the market, including all jobs. Low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: See the note to Figure 23.

3.2.2 Hours worked outside the market

The preceding subsection was dedicated to hours worked in the market, excluding time spent on non-market work such as care activities and household chores. As is well documented in the literature, around the world the burden of these activities falls disproportionately on women (Charmes, 2019). Thus patterns of gender differences in hours worked are likely to differ significantly depending on whether work includes non-market work. We use harmonized data from time-use surveys available for a sub-set of countries processed by GenLAC to document patterns in hours worked once non-market work is included in work hours.[11] In this analysis we focus on married or cohabiting individuals age 25-45.[12] We refer to this group as married individuals throughout this section for brevity.

Figure 35 shows total hours spent on non-market work in housework and care activities by married men and women in each of the LA countries for which data is available and the US. We restrict the sample to individuals between the ages of 25-45.[13] Bars with the letter "E" show the total hours spent by employed married women on non-market work. The bars without the "E" are for all married women regardless of their employment status. Men's average hours spent on non-market work are shown in the last two bars on the right for each country. For men, the "E" indicates that their female partner is employed.

As can be seen in the figure, married women in LA spend between a bit over 40 to 70 hrs a week on unpaid non-market work. This is comparable and, for many countries even higher than the time that

[11]There is some variation in the year for which this data is available across the countries. We use survey years that are closest to each other in timing and conducted before 2020 to align with the rest of our analysis which goes up to 2019. The resulting set includes surveys among which the earliest is 2010 for Peru and latest is 2017 for Costa Rica and El Salvador.

[12]The data does not allow us to identify who is married/cohabiting with whom so we cannot conduct couple level analysis.

[13]Although we are utilizing harmonized time use data, cross-country comparability remains limited and should be approached cautiously. This limitation stems from significant heterogeneity in the methodologies and protocols employed in Latin American time use surveys for different countries, as well as variations in the years they were conducted. Refer to the GenLAC Methodology section for more information about the data harmonization process undertaken to achieve the best possible comparability of time use indicators across countries.

men spend on market work as shown in Figure 32. Employed women tend to spend slightly less time on non-market work, with hours ranging between 30 in El Salvador and 60 in Mexico. With the exception of Paraguay, at least half of the non-market work time is spent on housework across the region. On the whole, women tend to spend more time on non-market work in HI and UMI countries compared to LMIs countries. The experience of women in couples across LA contrasts with that of US women in couples who, on average, spend much less time on non-market work at just under 30 hours per week (21 hours among employed women).

In all countries, men in couples spend less than half the time on housework and care activities than women. In most countries this proportion is closer to a third ranging between 10 hours in Ecuador and Guatemala and around 27 hours in Chile. Across the region, the time spent on non-market work by women exceeds that spent on these activities by men by much more than the excess number of hours that men spend on market work compared to women shown previously (Figure 32), i.e., the total number of hours worked is greater for women. Furthermore, though employed women spend less time on non-market work than women who are not employed, their male partners do not compensate by increasing their non-market work hours as can be seen by comparing the bar without an "E" to that with an "E" for men. The difference in non-market work hours between men in LA versus in the US is much smaller than that for LA women compared to US women.

This analysis clearly shows that focusing on time spent on market work only provides a partial view of gender inequality in work time. In order to paint a more complete picture, Figure 36 aggregates time-use survey data on both market and non-market activities to show how women fare relative to men in each of these individually and the two combined. A ratio of less than one indicates that women spend less time on a given activity than men. Darker columns show ratios for all married men and women, while lighter ones include only employed women (in couples) and men whose female partner works.

In line with results presented above in Figures 32 and 35, the gender ratio in market work is below one, indicating that women spend less time in market work, whereas the ratios are considerably higher than one for non-market work time. The difference in the two ratios tend to be smaller for employed women and men with employed women as partners. In most countries, the combination of women spending less time on paid work and a lot more time on non-market work than men translates into a ratio above one for total hours worked. Appendix Table A.11 shows that across the region this difference is statistically significant. The ratio is highest in Chile where women spend around 75% more time on work and non-work activities combined than men and lowest in El Salvador and Peru. The ratios increase slightly when conditioning on women being employed. The ratio in market work hours in the US is similar to that of LA countries in the HI group, but household chores and care activities are more evenly distributed, with women spending double the hours that men do, as opposed to triple. Overall, the total hours ratio is below one indicating that, unlike in LA, US women spend less time on the sum of market and non-market work than men.

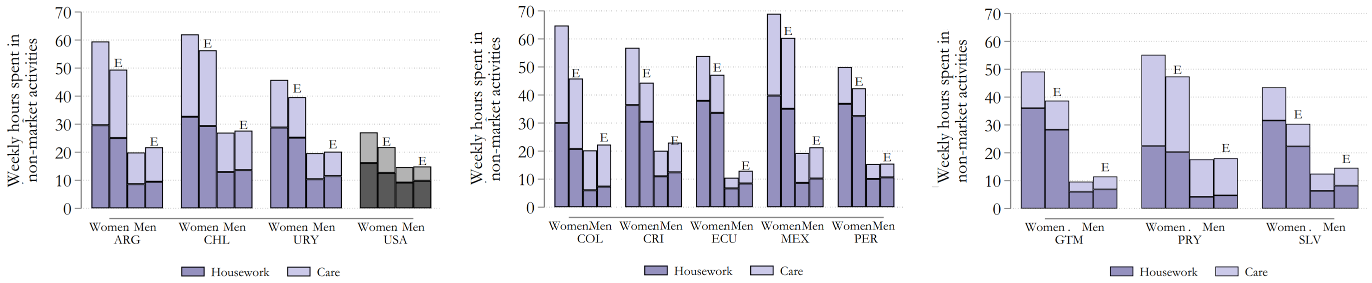
Figure 37 shows how patterns differ by education. Panels (a), (c) and (e) show results for the sample of individuals in couples aged 25-45, as before. Across the region, non-market work times are highest among individuals in the lowest education group. Whereas women in this group tend to spend somewhere between 3 and 6 times as much time on non-market activities as men, the difference is 2-3 times among those in the most educated group. The exception to this is Guatemala where women with higher education spend over 6 times as much time on non-market activities as men. In line with Figure

34, the gradient goes in the opposite direction for market work: in all countries the hours that women spend on market work are closer to those done by men for those with higher education relative to those with less education.

Combining paid and unpaid hours, there is much less evidence of systematic variation in the F/M ratio in total hours worked (blue column in Figure 37) across education groups. This is consistent with education gradients that go in opposite directions for paid and unpaid work. In the countries where we see some differences, it tends to be the case that the ratio of total hours women spend on work relative to men is highest among the least-educated group. This is the case in Argentina and Chile, for example.

Education gradients in F/M ratios of time spent on paid and unpaid work are much less pronounced in the sub-sample of employed women and men whose partners are employed (panels b, d, f in Figure 37). This is especially true for time spent on market work. As before, overall, in most countries we do not see large differences in F/M ratio of total time spent on market and non-market work between education groups.

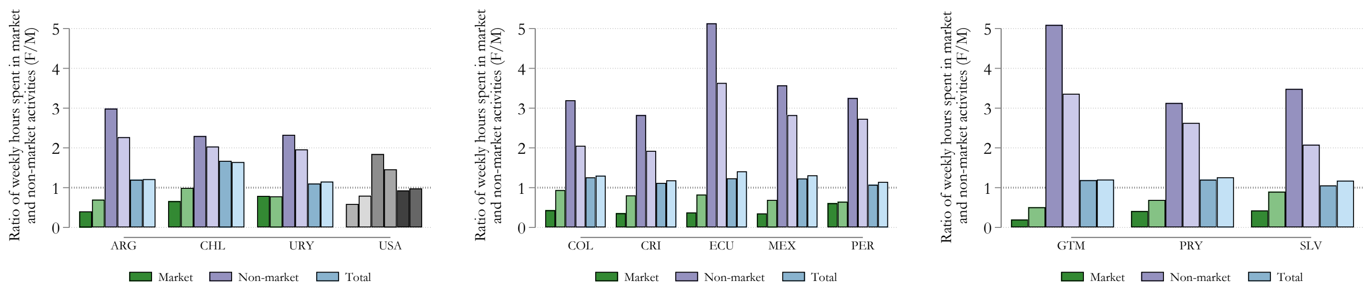
Figure 35: Weekly Non-Market Working Hours



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals in couples aged 25-45 years old. The letter "E" over a bar indicates average values for employed women or, in the case of men, for those men whose partner is employed. Time spent on care activities and household chores are derived from time use surveys. The value of the variable is set equal to zero when the individual does not do participate in an activity. *Source*: authors' own calculations based on time use surveys (GenLAC). The year of the time use surveys ranges from 2010 to 2017 (see tables B.4 and B.1 in Appendix B, respectively).

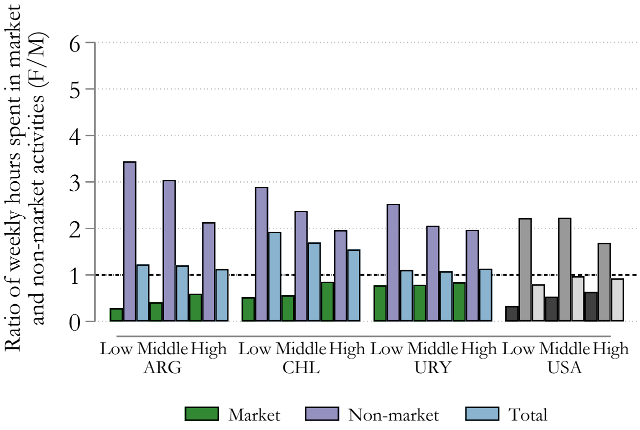
Figure 36: Market and Non-market Weekly Working Hours (Ratio F/M)



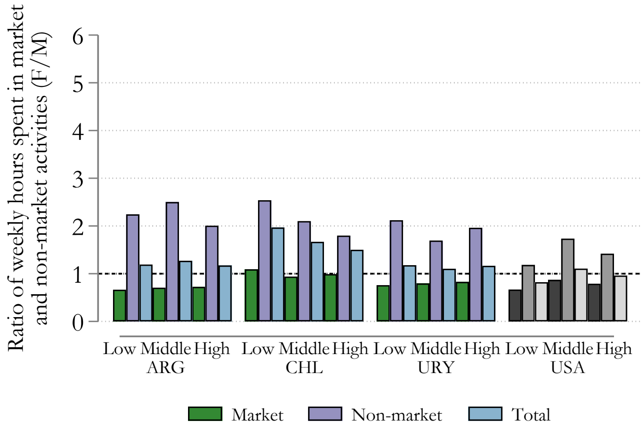
(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals in couples aged 25-45 years old. Non-market hours include care activities and household chores. Bars in dark colors show values for all individuals. Bars in lighter colors show the ratio for employed women relative to men whose partners are employed. The value of the variable is set equal to zero when the individual does not do participate in an activity. *Source*: see note to Figure 35.

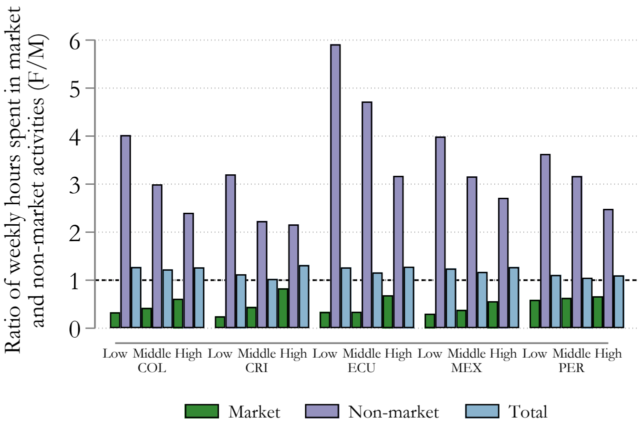
Figure 37: Market and Non-market Weekly Working Hours, by education (Ratio F/M)



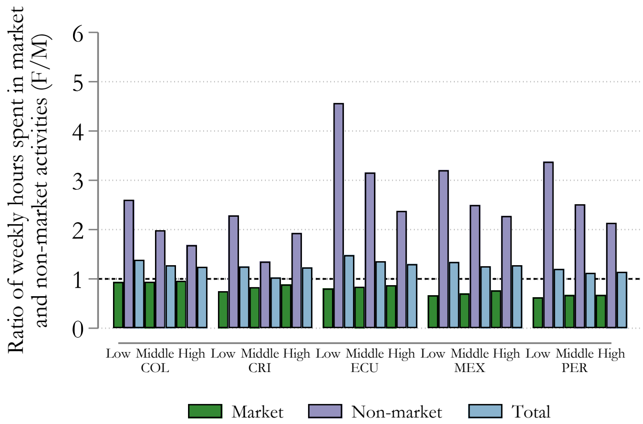
(a) High income, all



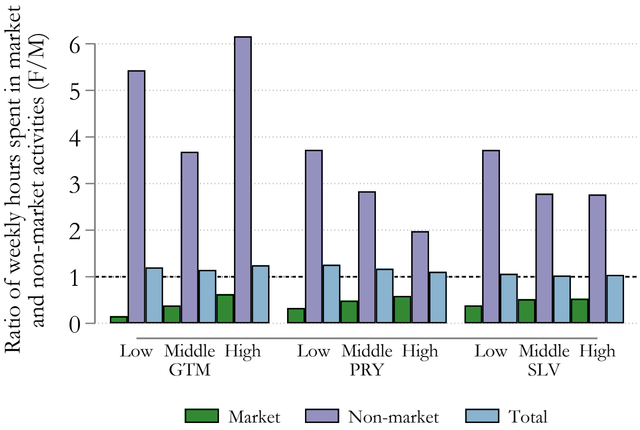
(b) High income, employed



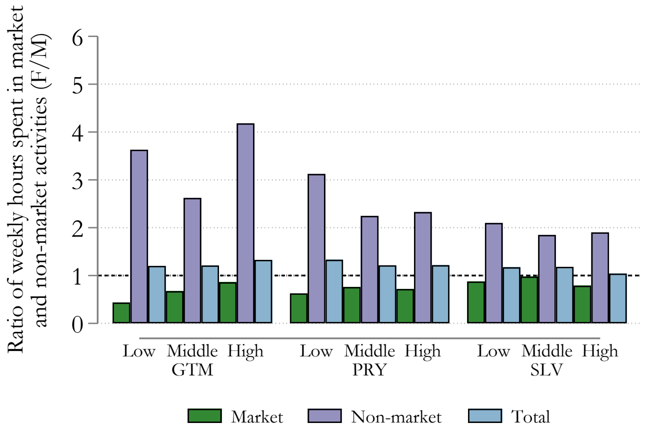
(c) Upper middle income, all



(d) Upper middle income, employed



(e) Lower middle income, all



(f) Lower middle income, employed

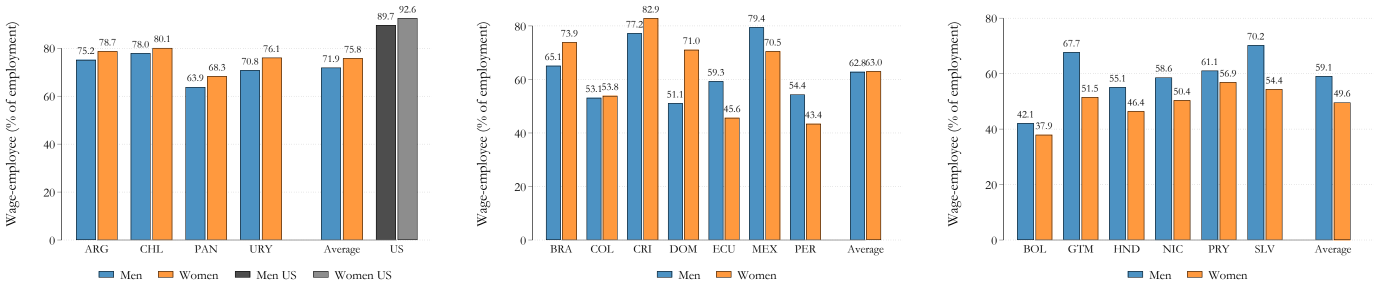
Note: Individuals in couples aged 25-45 years old. Figures (a), (c) and (e) show values for all individuals. Figures (b), (d) and (f) show the ratio for employed women to men whose partners are employed. Low refers to less than high school; medium denotes high school graduates without higher education; and high indicates completed tertiary education. Non-market hours include care activities and household chores. The value of the variable is set equal to zero when the individual does not do participate in an activity. *Source*: see note to Figure 35.

3.2.3 Types of Jobs

There are some important differences in the types of jobs that men and women do. We categorize employed individuals into four types, depending on what they report their main job to be: wage employees, employers, unpaid workers, or self-employed. Unpaid workers include individuals working on a family farm or business (mostly in retail) without receiving a wage. Figures 38a-38d show that, in all countries, women are less likely to be employers than men and much more likely to be unpaid workers. In some countries, such as Peru, Bolivia, and Ecuador, nearly a fifth of working women have unpaid jobs compared to less than 3% of men whereas in most HI countries there are few unpaid workers of either sex.

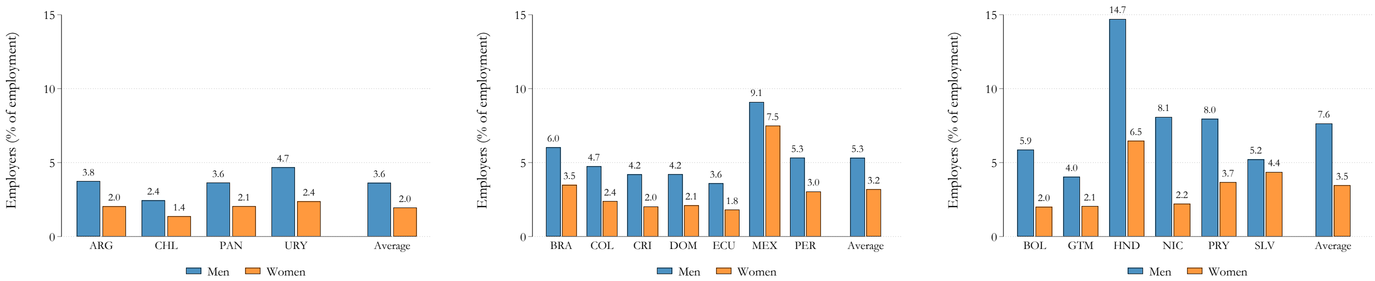
Figure 38: Share of Employment in Each Type of Job

(a) Wage Employees



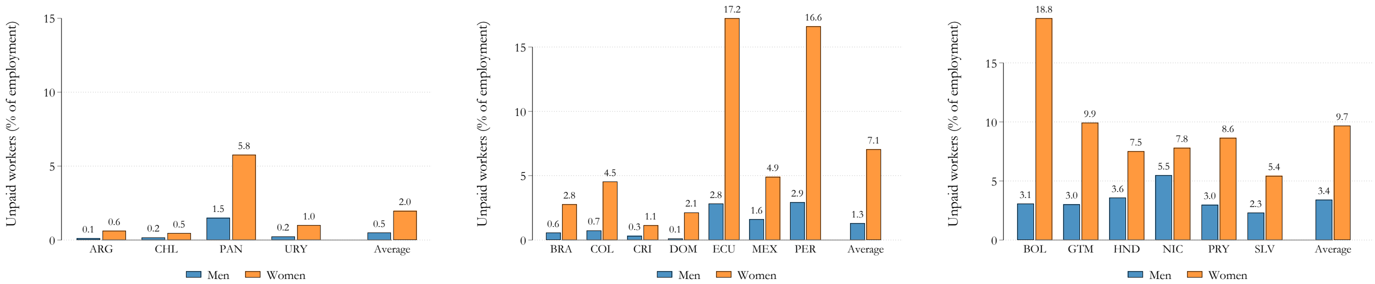
High income | Upper middle income | Lower middle income

(b) Employers



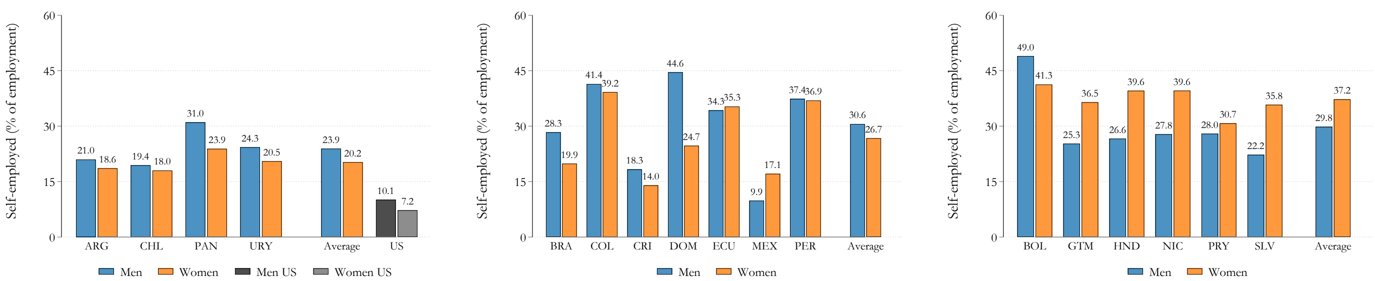
High income | Upper middle income | Lower middle income

(c) Unpaid Workers



High income | Upper middle income | Lower middle income

(d) Self-employed



High income | Upper middle income | Lower middle income

Note: Individuals aged 25-55 years old. For each sex, the figures show the share of employment in each of the following four categories, as defined in the text and depending on what the individuals report their main job to be: (a) wage employees, (b) employers, (c) unpaid workers, (d) self-employed. For the US, we only present statistics for wage employees and those in self-employment as the ACS data we use does not have a code for employers and the share of unpaid workers is nearly negligible (less than 0.002 within our sample). In the US, the self-employed category encompasses both incorporated (4.1% for males & 2.4% for females) and not incorporated self-employment (6% for males & 4.9% for females). The average bars show unweighted means. *Source*: see note to Figure 23.

There is a less consistent pattern of gender differences in wage employment and self-employment across countries. In HI countries and about half of the UMI countries, women are more likely than men to be wage employees and men are more likely than women to be self-employed. Across both categories, in the majority of these countries the gender gaps are fairly small. This is also the pattern that we see outside of LAC, for the US. This pattern is reversed, however, in LMI countries, as well as in Ecuador, Mexico and Peru from the UMI country group. On average, in LMI countries, the proportion of women is 10 percentage points lower than that of men in wage employment and about 7 percentage points higher in self-employment.

3.2.4 Job Quality: Informality and Firm Size

An important dimension of jobs in LAC is whether they are in the formal or informal sector. Those in the informal sector tend to have less employment protection, fewer formal rights, and less entitlements to in-work benefits. In this analysis we define wage workers without pension rights, non-professional self-employed, and all unpaid workers as working in the informal sector (ILO, 2013).

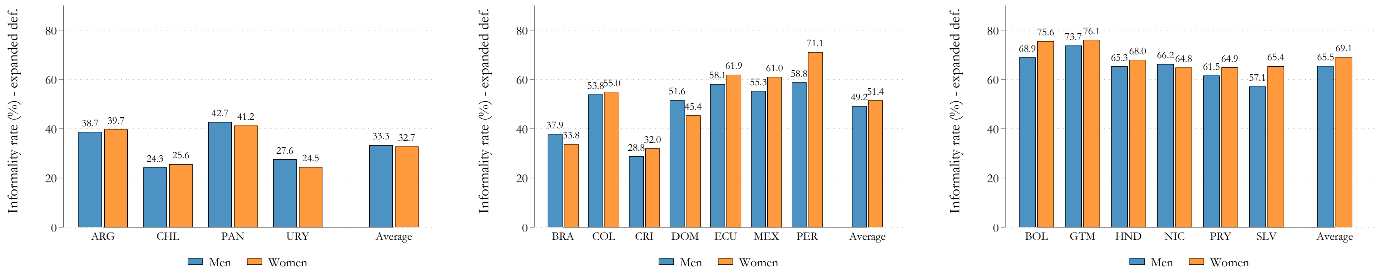
Overall, informality is much more widespread in the poorer countries in LAC (see Gasparini and Tornarolli, 2009, Perry et al., 2007) for thorough descriptions of labor informality in LAC). Across the LMI countries, around two-thirds of men and women work in the informal sector as their main job, compared to around a third in the HI countries. The largest gender gap in the informal sector is in Peru where 71% of working women report their main job to be in the informal sector, compared to 59% of working men (Figure 39a).

There is a great deal of variation in informal sector employment by education. As shown in Figure 39b, less-educated women are much more likely to work in the informal sector than women with a tertiary education. In most LAC countries, the main job of the majority of working women with incomplete secondary school education was in the informal sector in 2019, compared to no more than a quarter of women with complete higher education. We also see much larger gender gaps in informality rates among the less-educated workers compared to those with higher education (see Figure 40a). Indeed, in most countries, for those individuals with a tertiary education the share of men in the informal sector is greater than that of women. On the whole, the gender ratio in the informal sector has been stable for the last 20 years, though there was a period in the early 2000's when in the UMI countries there was a big decline in this ratio among the least-educated group; that trend has reversed in the more recent years bringing the gap back up to the level of those with complete secondary education (Figure 40b).

Another dimension that is likely to capture variation in job quality is firm size. Working for larger may provide several benefits, including more opportunities for progression within the firm and a lower risk of losing a job. Larger firms tend to also be more productive in LAC and thus pay higher wages (Eslava et al., 2021). We define a "large" firm as one with more than 5 employees as this is the measure available for all of the countries in the harmonized data-set. Overall, we see that both men and women are much more likely to be working in a large firm in the richer than the poorer countries in LAC (Figure 41a). With the exception of the Dominican Republic, a greater proportion of employed men report working in a large firm than employed women. On the whole, the size of the gender gap in this dimension is similar across poorer and richer countries. There is a steep education gradient in all of the countries; in most countries over half of working women with tertiary education are employed in

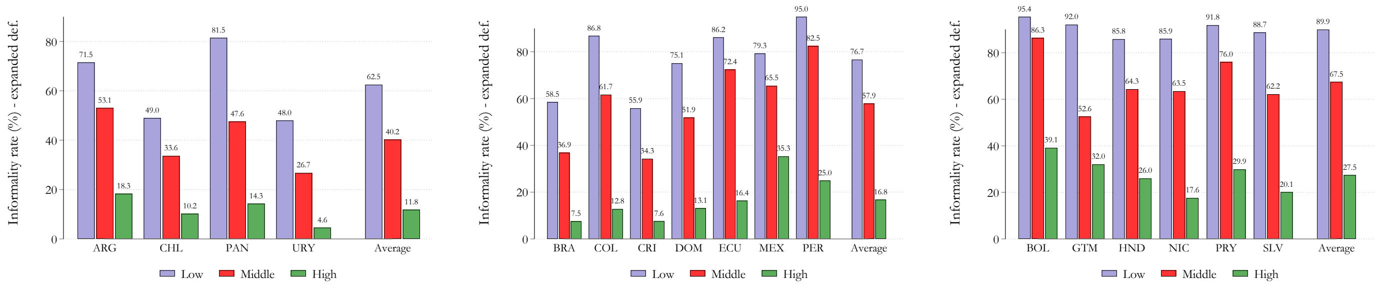
Figure 39: Share of employment in informal sector

(a) Share of Employment in Informal Sector by Gender



High income | Upper middle income | Lower middle income

(b) Share of Employed Women in the Informal Sector by Education



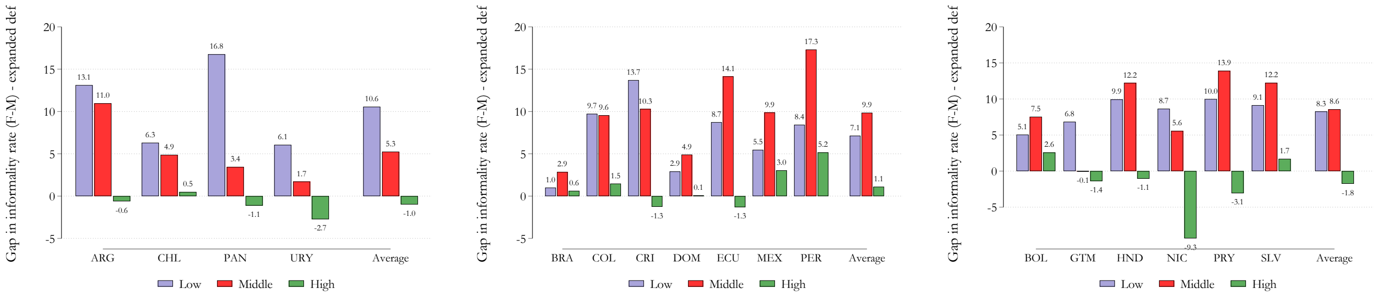
High income | Upper middle income | Lower middle income

Note: Individuals aged 25-55 years old. The figures show the share of employment that is in the informal sector, as defined in the text. In panel (b), low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: authors' own calculations based on LAC household surveys (GenLAC). Survey year is 2019 or the latest year available up to 2019 (see Table B.1 in Appendix B).

large firms compared to between a tenth (in LMI countries) and a quarter (in HI countries) of women without a high school degree (see Figure 41b). This is also the group with the largest gender gap as shown in Figure 42a. For example, in high income countries, on average, the proportion of women without a secondary school degree working in large firms is 20 percentage points lower than that of men in this education group, whereas women with higher education are as likely to work in large firms as men. Figure 42b shows that over the last 20 years gender gaps in the likelihood of working for a large firm have, on the whole remained stable or declined slightly.

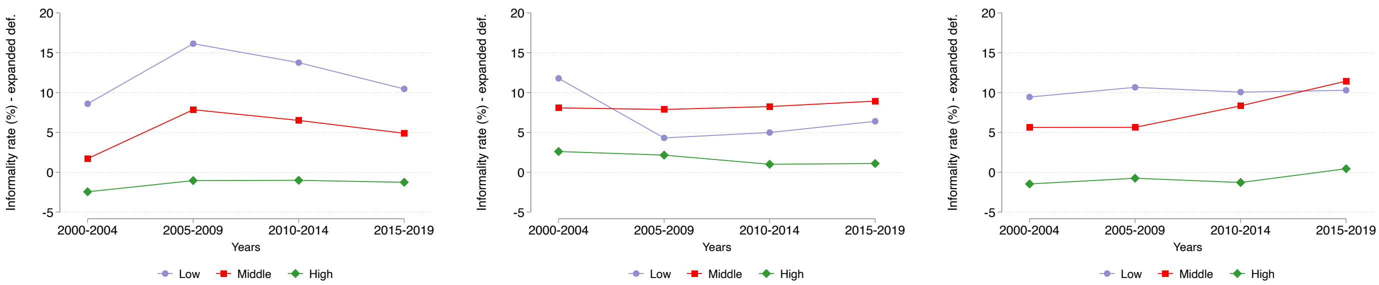
Figure 40: Gender Gap in Informality by Education (F-M)

(a) Gender Gap in Informality



High income | Upper middle income | Lower middle income

(b) Evolution of the Gender Gap in Informality

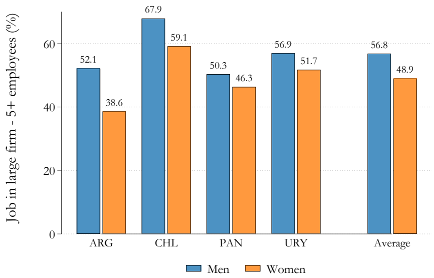


High income | Upper middle income | Lower middle income

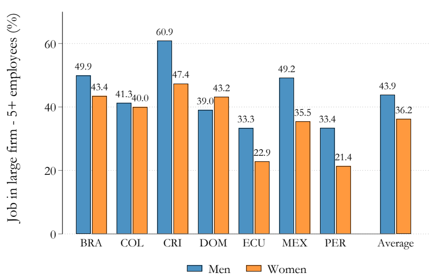
Note: Individuals aged 25-55 years old. The figures show, by education level, the gender gap (F-M) in the share of employment that is in the informal sector, as defined in the text. Low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. In Panel (a) the average bars show unweighted means. In Panel (b), each dot represents the (unweighted) cross-country average of their 5-year average. In Panel (a), the survey year is 2019 or the latest year available up to 2019. In Panel (b), only countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries. See Table B.1 in Appendix B). *Source*: see note to Figure 39.

Figure 41: Share of Employed Who Work in Large Firms

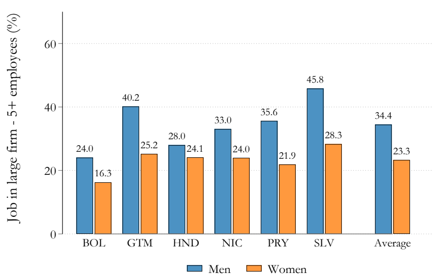
(a) Share of Employed Who Work in Large Firms by Gender



High income

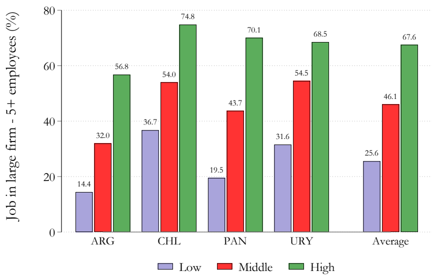


Upper middle income

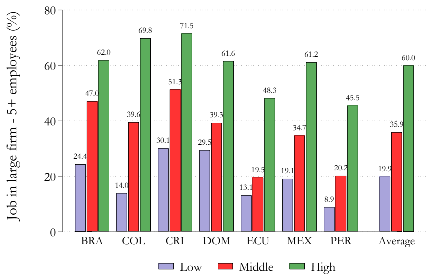


Lower middle income

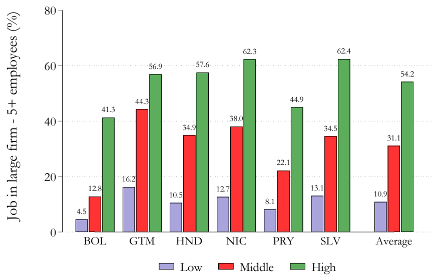
(b) Share of Employed Women Who Work in Large Firms by Education



High income



Upper middle income

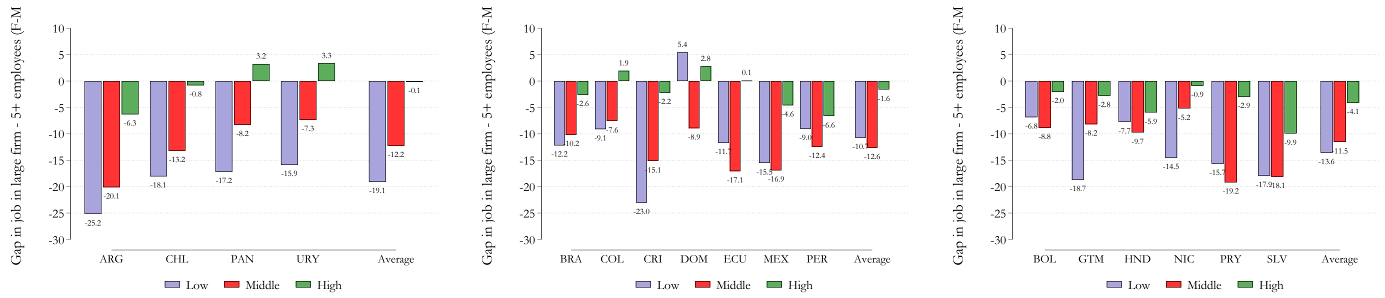


Lower middle income

Note: Individuals aged 25-55 years old. The figures show the share of employed individuals who work in large firms, as defined in the text. In panel (b), low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: See the note to Figure 39.

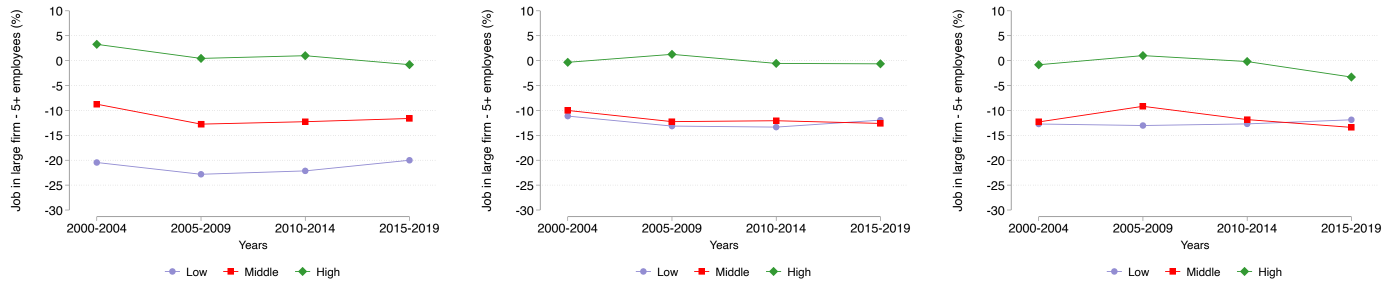
Figure 42: Gender Gap in Working for Larger Firms (F-M), by Education

(a) Gender Gap in Working for Larger Firms



High income | Upper middle income | Lower middle income

(b) Evolution of the Gender Gap in Working for Larger Firms



High income | Upper middle income | Lower middle income

Note: Individuals aged 25-55 years old. The figures show, by education level, the gender gap (F-M) in the share of employed individuals who work in larger firms (i.e., those with at least 5 employees). Low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. In Panel (a) the average bars show unweighted means. In Panel (b), each dot represents the (unweighted) cross-country average of their 5-year average. *Source*: See the note to Figure 39.

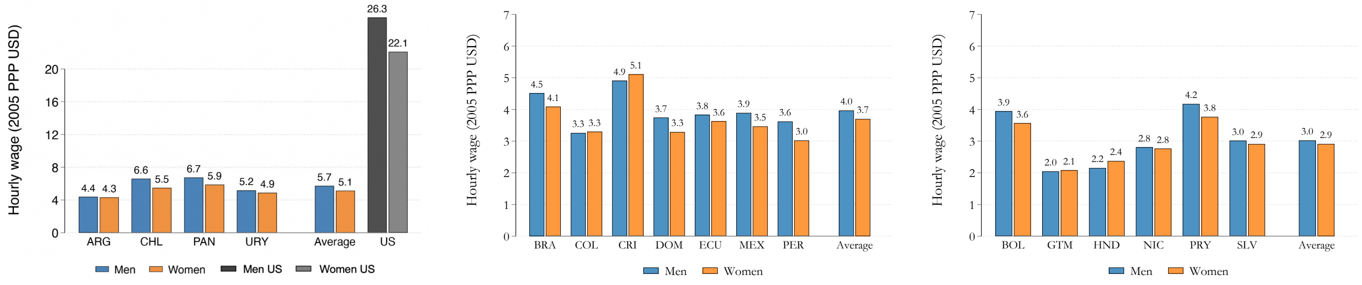
3.3 Wages

Next we turn to remuneration. We start by examining gender differences in hourly wages of workers (including those who are self-employed) between the ages of 25 and 55. Figure 43 shows that on average in LAC, as in virtually everywhere, women earn a lower hourly wage than men. For example, in HI LAC countries the average hourly wage of a woman is 90% of a man's; in the US it is 84%. There are, however, several countries where the average hourly wage for men and women is roughly equal (Argentina, Colombia, Guatemala and Nicaragua) or even slightly higher for women (Costa Rica and Honduras).

Figure 44 shows how female/male earnings ratios differ by levels of education. We do not see a strong consistent trend. In several countries the gender wage gap is constant across education levels. These include Colombia, Costa Rica, Peru, Honduras, and Nicaragua. This is similar to what we see outside of LAC for the US. In Brazil, Chile, Guatemala, and El Salvador the gender wage gap increases with education. For example, while there is no gender wage gap among workers with incomplete high school education in Guatemala, working women with completed tertiary education earn only 70% of what men with this level of education earn. We see the reverse pattern in Argentina, the Dominican Republic, Bolivia, and Paraguay where the gender wage gap is higher among the less educated workers.

In order to explore which characteristics might be contributing to the gender wage gaps across the region, we decompose the gaps by estimating wage models which include controls for (i) basic individual

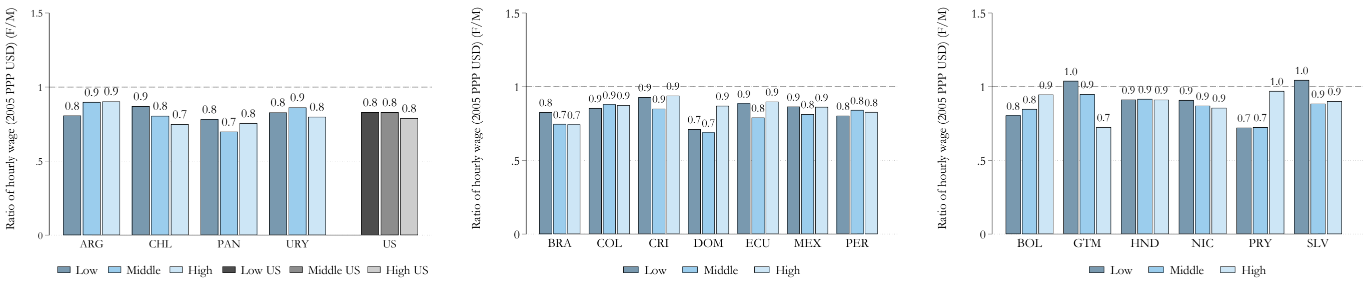
Figure 43: Mean Hourly Wage in LAC (2019)



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals aged 25-55 years old. This figure shows, by gender, the mean hourly wage of workers (2005 PPP USD). The average bars show unweighted means. *Source*: *Source*: see note to Figure 23.

Figure 44: Gender Wage Gap in Mean Hourly Wages (F/M) by Education



(a) High income **(b)** Upper middle income **(c)** Lower middle income

Note: Individuals aged 25-55 years old. This figure shows, by education level, the F/M ratio of mean hourly wage (2005 PPP USD). The average bars show unweighted means. Low refers to less than high-school education; medium denotes high school graduates without higher education; and high indicates completed tertiary education. The average bars show unweighted means. *Source*: see note to Figure 23.

characteristics of workers: age, region of residence, and whether living in a rural area; (ii) education; (iii) employment sector and occupation, as well as whether in full time work and whether working in the informal sector (see notes for Figure 45 for exact definitions). We implement the Oaxaca-Blinder decomposition method in order to assess the role that these characteristics play in explaining the gender gap, as well as how much of the gap remains even after taking differences in these characteristics between working men and women into account (Oaxaca, 1973).[14]

Figure 45 shows female to male log wage ratios unadjusted and adjusted for the characteristics listed above (basic characteristics, education, job characteristics). Mirroring the patterns in Figure

[14]The Oaxaca-Blinder decomposition is a widely employed technique to study wage gender differences. From the estimation of linear regression models, this decomposition shows the proportion of the wage gap between men and women that can be attributed to (i) differences in their characteristics; and (ii) differences in the size of regression coefficients. These two components are referred to as the "explained" and the "unexplained" parts of the gender wage gap. To compute the decomposition, for each year we estimate separate male (m) and female (f) ordinary least squares log wage regressions (Y), using a set of explanatory variables X (i.e. age, location, education and job characteristics): $Y_m = X_m\beta_m + u_m$, and $Y_f = X_f\beta_f + u_f$. Using the estimated parameters $\hat{\beta}_m$ and $\hat{\beta}_f$, and the mean values $\bar{Y}$ and $\bar{X}$, we decompose the gender differences in log wages into two terms:
$\bar{Y}_m - \bar{Y}_f = \hat{\beta}_m\bar{X}_m - \hat{\beta}_f\bar{X}_f = \hat{\beta}_m(\bar{X}_m - \bar{X}_f) + \bar{X}_f(\hat{\beta}_m - \hat{\beta}_f)$
The first term accounts for the portion of the gender difference in log wages that is explained by gender differences in the explanatory variables. It is evaluated using the male coefficients ($\hat{\beta}_m$). The second term shows the unexplained portion. Following Blau and Kahn (2017), we exponentiate this unexplained component to obtain the adjusted female/male wage ratio after accounting for the explanatory variables included in the model.

43, the unadjusted log wage ratio is below 100% in most countries, with lowest ratios in Peru, the Dominican Republic, and Bolivia. In most countries the adjusted female to male log wage ratio is *lower* than the unadjusted ratio. Across the majority of countries the difference ranges between around 4.5 and 17 percentage points. The clear outlier is Honduras where the difference is 57 percentage points; the unadjusted ratio here suggests that working women's wages are 30% *higher* than men's, while adjusting for covariates reduces that by 57 percentage points to 26% *lower* than men's, which is the lowest adjusted gender wage gap in the region. Countries in which the unadjusted and adjusted ratios are closest include Chile, Dominican Republic, and Bolivia. In addition to Honduras, countries with some of the biggest falls in the ratio after adjustment for covariates include Nicaragua and Panama. The exception is Peru where adjusting for covariates does not change the ratio.

The striking finding that, with the exception of one country, the gender wage gap increases when characteristics of workers are included suggests that far from explaining the gender wage gap, differences in these characteristics mask the much larger wage gaps that would exist if working women were more similar to working men along these dimensions.[15] Although the US has similar gender wage gaps as HI countries in LA, adjusting for covariates in the US results in a reduction in the gender wage gap (albeit a very small one) suggesting that at least a small part of the gap is due to women differing in some of the characteristics that yield higher wages.

In order to examine these findings further, Appendix Table A.12 shows the contribution of different characteristics to the size of gender wage gap, based on the Oaxaca-Blinder decomposition. Column 6 presents the raw differences in log wages between males and females, while column 4 shows the log points that are explained by all the gender differences in productive characteristics considered in the model. Column 5 represents the log point differences that remain unexplained. Columns 1-3 show how male-female differences in age & location (column 1), education (column 2) and job characteristics (column 3) translate into differences in their log wages. For each column, the values are computed by multiplying the male-female mean difference in the characteristic by the respective male coefficients from the wage regression (refer to footnote 14 for more details). Columns 7-9 then show the proportion of the total gender log wage gap that is explained by these differences.[16] For example, in the case of Bolivia (first row), we see that differences in age and location between working men and women contributes 0.01 log points to the gender wage gap (column 1), which is equivalent to 5% of this gap (column 7). In line with Figure 45, most entries in this table are negative numbers showing that women have *higher* levels of the characteristics that contribute positively to wages. For example, the results in column 2 for Chile show that the difference in men and women's education is responsible for -0.03 log points in wages. The negative value is due to the fact that, on average, working men have *lower* education than working women. Column 8 then shows that if Chilean women had the same level of education as men on average, then at current wages the gender wage gap would widen further by 23%.

The fact that the great majority of the values in all cells in Columns 1- 3 and 7 - 9 are negative suggests that in most countries if working women had the same characteristics as working men, there would be a further widening of the wage gap. Overall, with the same characteristics, Column (11) shows that, in most countries, the gender wage gap would increase by at least 50%. Thus the gender wage gap in LA countries is driven by the "unexplained" component i.e. by differences in the wages paid to

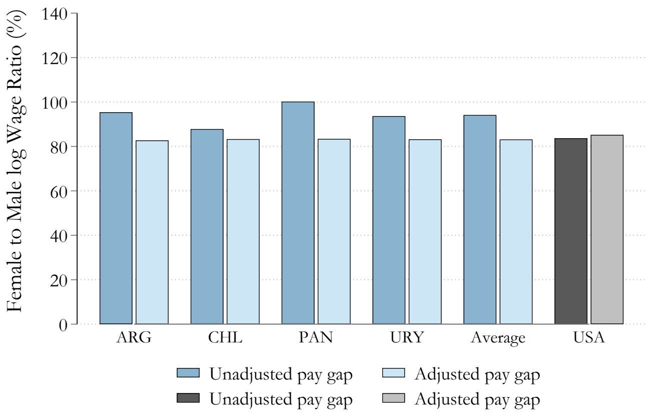
[15] This finding is in line with existing evidence for Latin America (e.g. Atal et al., 2009).

[16] Note that some numbers in columns 8-11 are very large, e.g. Panama and El Salvador. This is due to the fact that these countries have very small unadjusted wage gaps.

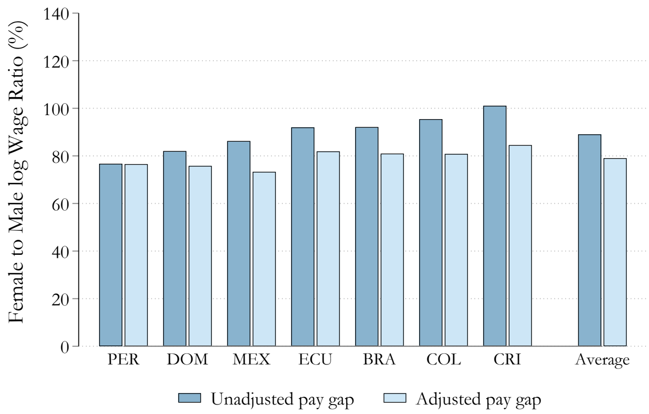
men and women with the same characteristics. Of course, our data does not allow us to observe all characteristics of the individual or the job/occupation and factors such as experience in the workplace or finer occupational categories could decrease the unexplained portion of the wage gap significantly.

The case is different in the US. Although there, as in Latin America, women are more educated than men, differences in job characteristics account for nearly a quarter of the US gender wage gap. This is why, for the US, Figure 45 shows a slightly higher adjusted than unadjusted F/M log wage ratio, but not for LAC countries.

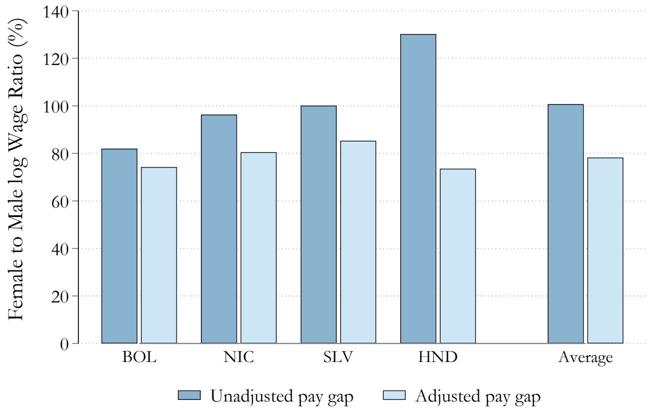
Figure 45: Oaxaca-Blinder Decomposition: Female to Male log Wage Ratio (%)



(a) High income



(b) Upper middle income

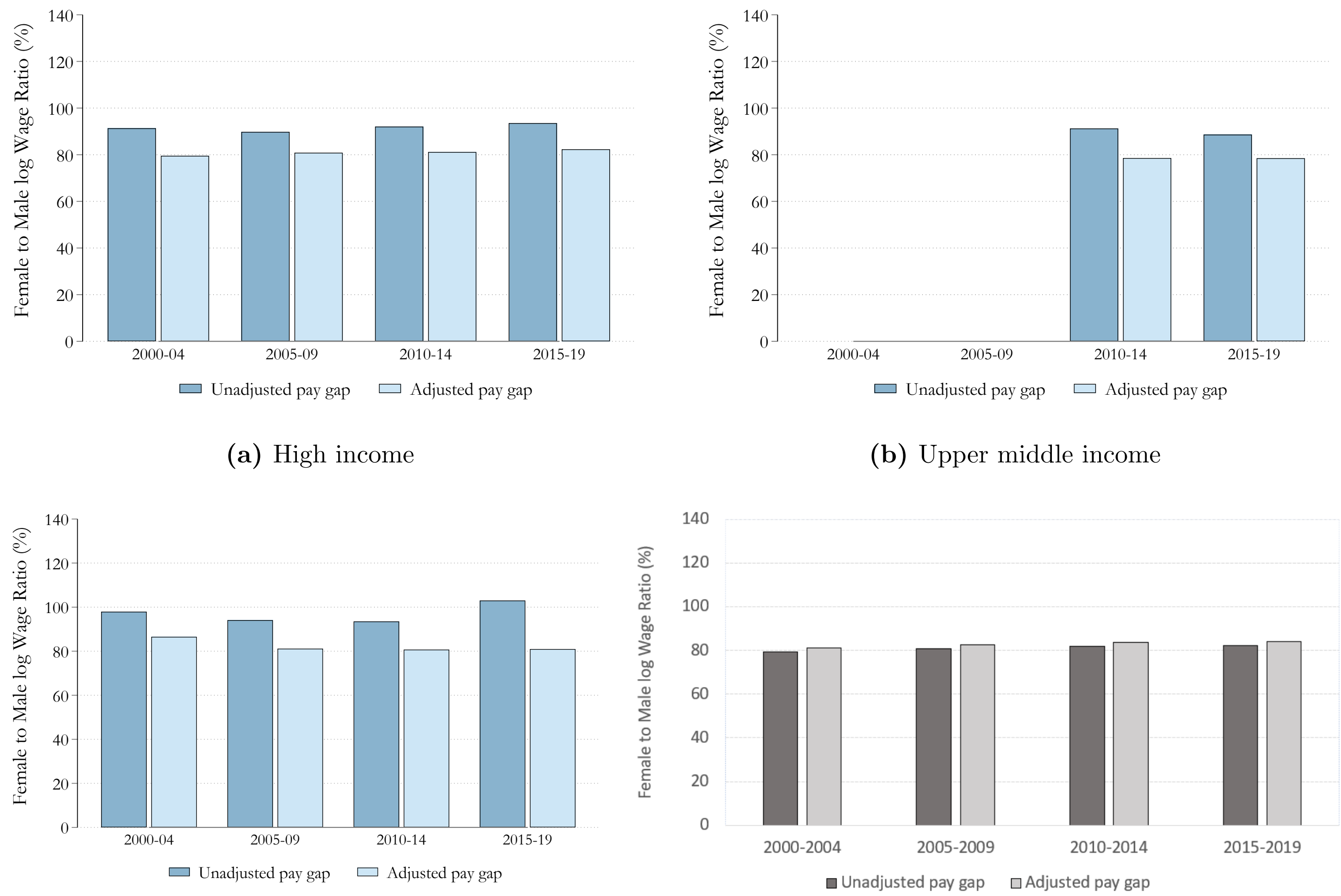


(c) Lower middle income

Note: Workers aged 25-55 years old, working at least twenty hours a week. The model used for the Oaxaca-Blinder decomposition controls for age, age squared, region of residence, an indicator for living in a rural area, education, sector, occupation (2-digits codes ISCO), an indicator for full-time worker (35+ hours a week), and another for working in the informal sector. The unadjusted gender wage gap represents the female-to-male log wage ratio, multiplied by 100, and it is calculated as the inverse of the exponential of the log-point values shown in Table A.12 in Appendix, column 6. Lighter bars show the adjusted female-to-male log wage ratio after accounting for covariates and are calculated as the inverse of the exponential of the values shown in column 5. The values shown in this figure are also displayed in columns 13 and 14 of Table A.12 in Appendix. The average bars display unweighted means. *Source*: see note to Figure 23.

Figure 46 shows that there has been little change in the unadjusted and adjusted female to male log wage ratios over the 20 years between 2000 and 2019 in LAC. Both the adjusted and unadjusted ratios have remained remarkably stable over this period across the LA region. If anything, the unadjusted gap has grown slightly in LMIs while for most of the period the adjusted gap has remained constant. We see more evidence of a trend over time in the US. Here both the unadjusted and adjusted ratios have grown slightly over time indicating a gradual narrowing of the gender wage gap. The unexplained component has remained constant as there has been little change in the difference between the unadjusted and adjusted gender wage gap.

Figure 46: Evolution of the Unadjusted and the Adjusted Female to Male log Wage Ratio (%)



(a) High income

(b) Upper middle income

(c) Lower middle income

(d) United States

Note: The figure shows the evolution of the unadjusted and adjusted female-to-male log wage ratios (%) computed from the Oaxaca-Blinder decomposition, as explained in the note to Figure 45. Each bar represents the (unweighted) cross-country average of their 5-year average. Only countries with available data in the corresponding periods are included (unbalanced panel in the case of LMI countries and missing data on occupation in UMI countries before 2010. See Table B.1 in Appendix B). *Source*: see note to Figure 23.

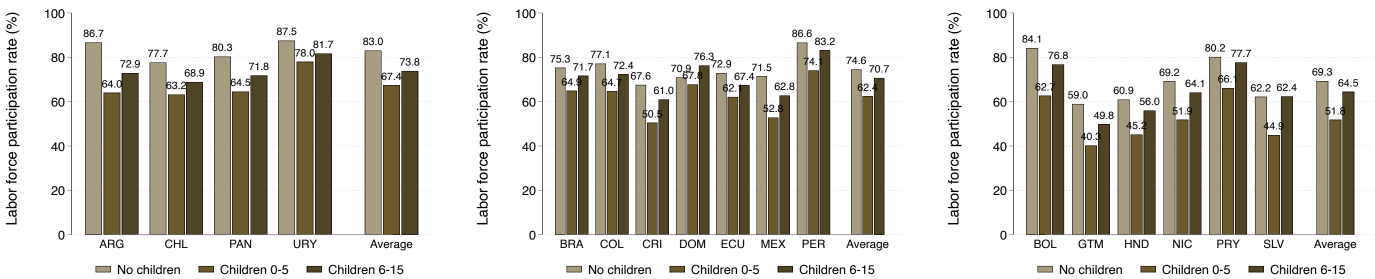
3.4 Children

In our preceding analysis of wages and labor force participation (LFP), we did not include either marital status or the number of children as potential explanatory variables as they are likely to be endogenous to these outcomes. Parenthood has been found to be associated with a widening of gender gaps in the labor market globally. There are strong negative associations between having children and labor market outcomes for women which are absent for men. This finding holds even in countries considered to have some of the most progressive gender norms and strong public provision of child-care, such as Denmark (Kleven et al., 2019). Here we present some descriptive analysis of heterogeneity in LFP and wages across women with and without children, as well as between mothers and fathers.

Panel a of Figure shows FLFP in 2019 across LAC countries among 25-55 year olds, distinguishing between women without children, those with children age 0-5 and those with older children (age 6-15). Across the region we see the expected pattern of lower LFP among women with children than without, with by far the lowest rates among women with young children. On average, in LMI countries in the region there is a 17 percentage points gap between the LFP of women without children and those with young children. This gap is a bit smaller, but comparable, in the wealthier countries. In half of the LMI countries, a strikingly low proportion (less than 50%) of women with small children were in the labor force in 2019.

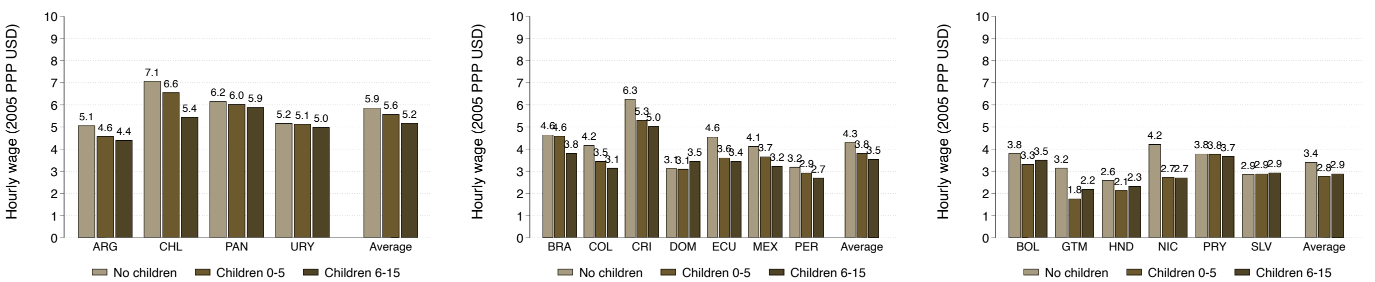
Figure 47: Female Labor Force Participation, Wages, and Children

a) Female Labor Force Participation



(a) High income **(b)** Upper middle income **(c)** Lower middle income

b) Wages



(d) High income **(e)** Upper middle income **(f)** Lower middle income

Note: Women aged 25-55 years old. Lighter olive bars show the LFP rate (panel a) and average wage (panel b) of women without children; the medium olive bars show LFP (panel a) and wages (panel b) of women with children aged 0 to 5 years old; the darker olive bars show the LFP (panel a) and wages (panel b) of women with children aged 6 to 15 years old. Wages are measured in 2005 PPP USD. The average bars show unweighted means. *Source*: authors' own calculations based on household surveys (GenLAC). Survey year is 2019 or the latest year available up to 2019 (see Table B.1 in Appendix B).

While there is some, though not complete recovery, in LFP as children get older, a parallel recovery is not observed in hourly wages for most countries. Panel b of Figure 47 shows that on average, across LAC, hourly wages among working women without children are higher than those of working women with children. In many of the countries, especially richer ones, working women with young children have a higher wage than working women with older children. This may reflect various factors: women with younger children are themselves younger, on average, and thus likely to have more education and be in more highly-paid occupations. This is not the pattern that we see in the poorer countries: there, women with older children have the same or a higher wage than women with younger children and in Paraguay and El Salvador there is almost no difference in the hourly wages of the three groups of women.

Clearly across most countries in the region there are significant differences in wages of women with and without children. Next we explore how women with children fare in the labor market relative to men with children. We adopt an event-study methodology following the approach taken in several recent studies of the impact of children on the gender wage gap (Figure 47) to quantify the gaps that emerge between men and women after the birth of the first child and how these evolve over the years following that.

In order to do this we create pseudo-panels (Kleven et al., 2022) for each of the countries in our analysis using multiple rounds of cross-sectional data from household surveys.[17] We build the pseudo panels by matching individuals on age and location: A parent observed at time t is matched to a childless individual in the same region who is p years younger and was observed in the cross section data p years before.[18] This yields the proxy observations for $t = -p$.[19]

Using this pseudo-panel we estimate the following model separately for men and women:

$$y_{it} = \sum_{\tau \neq -1} \beta_\tau . I\left(k_{it} = \tau\right) + \sum_j \gamma_j . I\left(j = age_{it}\right) + \delta_y . I\left(y = t\right) + \varepsilon_{it} \qquad [1]$$

where y_{it} is the outcome of interest (LFP and earnings) for individual i at time t. The first term on the right-hand side is a set of event time dummies, $\tau = k_{it}$, which indicate the years relative to the birth of the first child of individual i at time t. The events $\tau \geq 0$ capture the post-child effects relative to the base year which is $\tau = -1$, i.e., one year before the first child was born. The second and third term are a full set of age-in-years dummies and calendar year dummies to control non-parametrically for life-cycle trends and time trends. We scale β_τ to show our results as a percentage effect compared to the counterfactual outcome without children predicted by the estimated model (see Kleven et al., 2019).

Figures 48a-48c plot the results for LFP. In all of the countries we see very similar trends in LFP for men and women in the three years before the birth of the first child, controlling for life-cycle and time-trends, followed by a sharp divergence after the birth of the first child. This divergence is driven entirely by a sharp drop in women's LFP, which is between 20-30% in HI countries (similar to the 25% estimated for the US in Kleven, 2022) and 30-40% in UMI and LMI countries. There is evidence of some recovery over the 5 years following the birth of the child in the majority of UMI and LMI countries but not in the HI countries.[20] At the end of the 5 year period, therefore, the decline in the LFP of mothers looks more similar across HI, UMI, and LMI countries. There is no evidence of any decline in

[17] Results presented here computed by using pseudo-panels in Chile are in line with those shown in Berniell et al. (2021) using Chilean panel data.

[18] While (Kleven et al., 2022) matches on education as well, we think it is potentially problematic to do so as women may not have finished their education 5 years before giving birth to their first child. Note furthermore that any age restriction (here we start at age 25 for first birth), inevitably introduces a degree of selection.

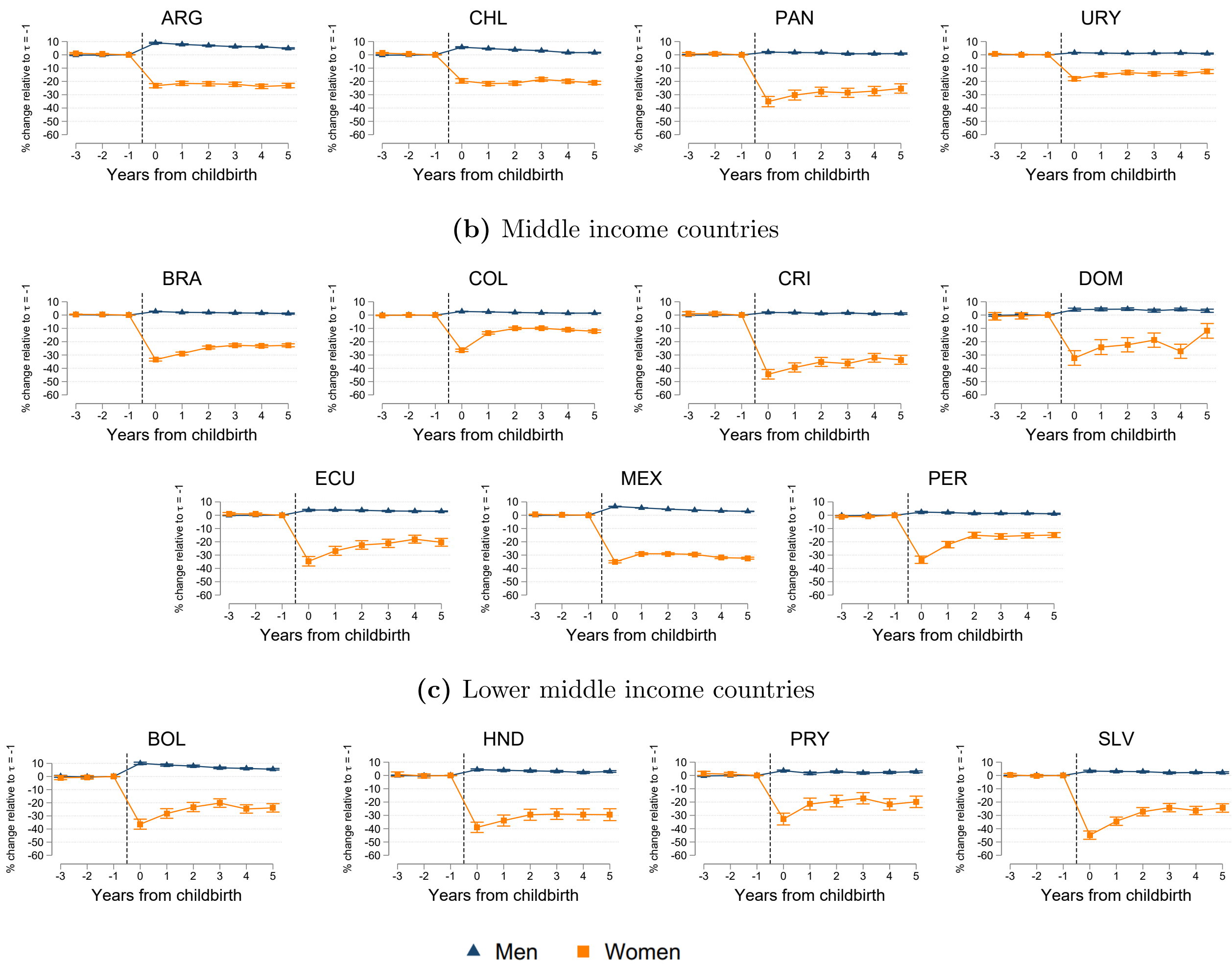
[19] In the cross-section we can identify whether the individuals are parents and the year in which their first child was born. Let $\tau = k_{it}$ indicate the period relative to the birth of the first child of individual i at time t, and let $\tau = 0$ identify the year that the first child was born. The data allows us to observe individuals once they become parents, but not before, i.e. we do no have information for $\tau < 0$. In order to overcome this problem, we match a parent i of age a observed in year t and τ years relative to the first childbirth to a non-parent individual observed in year $t - \tau - p$, at age $a - \tau - p$, living in the same region. We do this to trace a pseudo-history of 5 years prior to becoming a parent (i.e. with $p = 1, ..., 5$). If there is more than one observation that could be a match, we collapse the observations using sampling weights.

[20] Berniell et al. (2021) shows that after the first child is born, the probability of employed mothers having an informal job increases substantially but not for fathers. The availability of informal jobs —characterized by more flexible working hours, but also lower wages and weaker social protection— might serve as a buffer against the drop in female employment.

men's LFP around the time of the birth of their first child or in the 5 years after that.

Figure 48: Parenthood and Labor Force Participation

(a) High income countries



Note: These figures show, for men and women, the estimated impact of children on labor force participation, from equation 1 given the matching methodology described in the text. As the omitted category is $\tau = -1$, the scaled coefficients show the impact of children as a percentage of the counterfactual relative to the year preceding the birth of the first child. Controls include calendar year and age fixed effects. Sample restriction: age for first birth is 25 to 45. The figure displays the 90% confidence intervals. *Source*: authors' own calculations based on household surveys (GenLAC). Years 2003-2019.

In line with the findings for LFP, Figures 49a-49c show similar evolution in earnings among men and women before the birth of the first child, followed by a sharp drop for women but not for men after this event.[21] In fact, in several of the countries, such as Argentina and Bolivia, we see an increase in male earnings in the first few years following the birth of the first child. The drop in women's earnings varies in magnitude across countries, ranging between around 50% in El Salvador and Bolivia to around 20% in Argentina and Colombia; as with LFP, it tends to be larger in poorer countries. Although there is some recovery in LFP, especially in the poorer countries, this is not reflected in earnings. In several countries including Argentina, Brazil, and Mexico, women's earnings decline further over this period. There are a few exceptions; some recovery of around 10 percentage points is evident in Ecuador, the Dominican Republic, Peru, and El Salvador. In most countries, the gap between men and women remains constant over the 5 years after the birth of the child as there is also a slight reduction in male

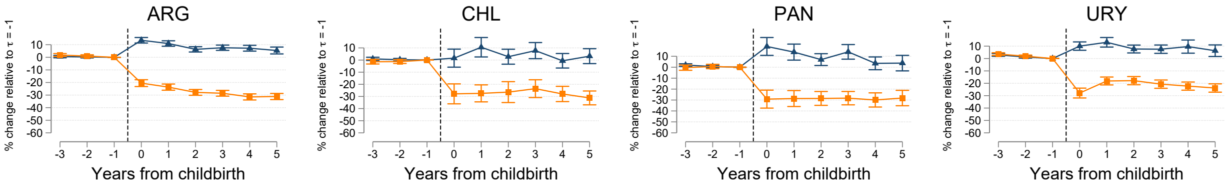
[21] Note that the earnings include zeroes for women who are not participating in market work.

earnings.

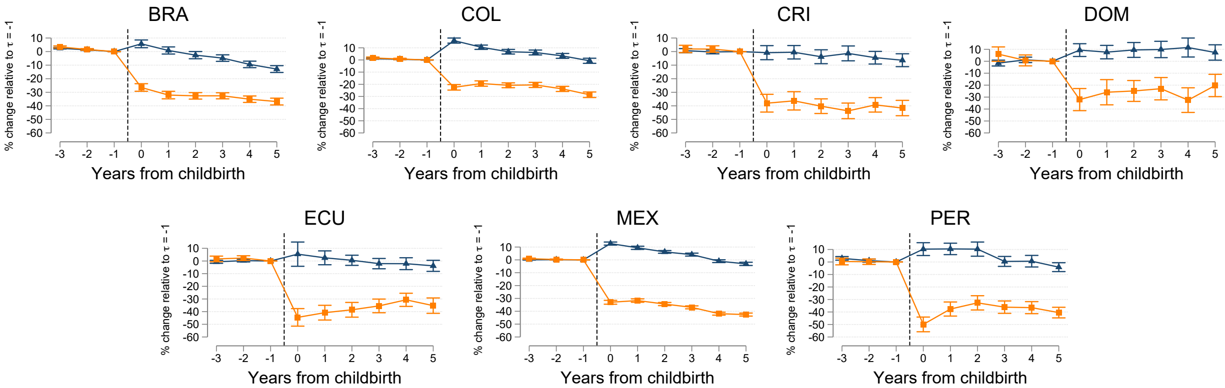
It is important to interpret what has been called the “motherhood penalty” correctly. The fall in women’s earnings does not reflect discrimination on part of the employer (though this may account for some of it in some countries). A large part is driven by women, and not men, deciding to leave the labor force once they become mothers, or by reducing their work hours, or by switching to a more flexible (and often less well-paid) job. These decisions themselves are driven by factors such as the availability, affordability, and quality of childcare as well as by expectations regarding mothers’ versus fathers’ roles in the care of their child.

Figure 49: Parenthood and Earnings

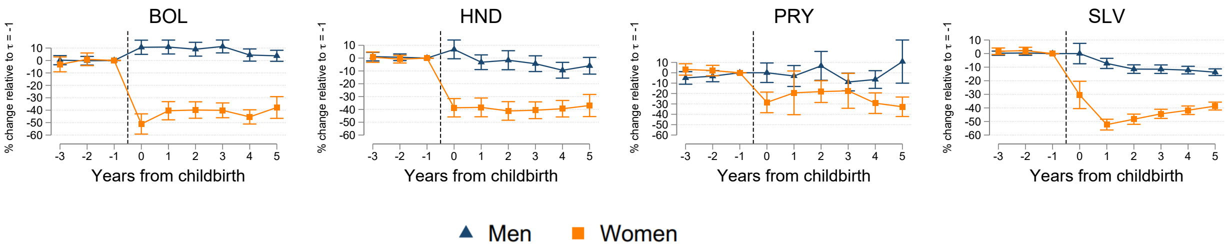
(a) High income countries



(b) Upper middle income countries



(c) Lower middle income countries



Note: These figures show, for men and women, the estimated impact of children on labor market earnings, from equation 1. As the omitted category is $\tau = -1$, the scaled coefficients show the impact of children as a percentage of the counterfactual relative to the year preceding the birth of the first child. Controls include calendar year and age fixed effects. Sample restriction: age for first birth is 25 to 45. The figure displays the 90% confidence intervals. *Source*: see note to Figure 48.

3.5 Gender Roles

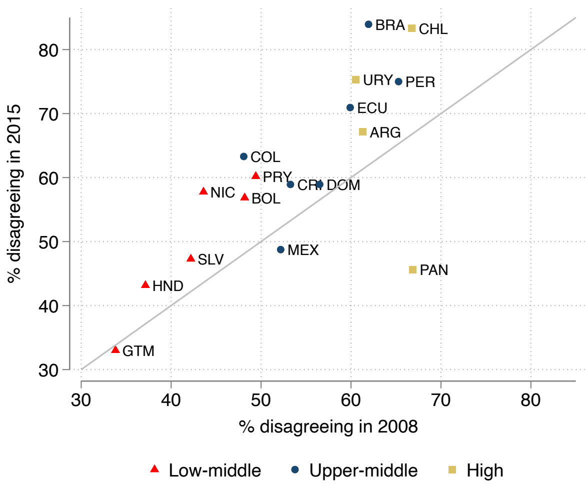
How individuals believe that men and women should behave in various environments within and outside the home affects how people act, their aspirations, and the opportunities that are open to them, with important consequences for gender equality and the economy (see Fernández and Fogli, 2009 and Fernández et al., 2021). Here we use nationally representative polls from Latinobarometro to examine on how women and men are viewed in several spheres related to work.

Latinobarometro asks respondents to indicate their degree of agreement with several statements regarding beliefs about the appropriateness of women working and their relative competence in business and politics. Specifically respondents are asked to indicate whether they strongly agree, agree, disagree or strongly disagree that "A woman should work only if her husband does not earn enough"; "Men make better business executives than women"; and "Men make better political leaders than women."

We start by documenting variation in responses to these statements across countries and over time. We then examine cross-country patterns in gender gaps in the responses, as well as how these gender gaps differ across education groups and cohorts. We end by showing a strong negative correlation between the gender gap in LFP (M-F) and the progressivity of social norms regarding women's work.

Figure 50 plots the proportion of respondents age 25-55 who either *disagreed* that a woman should work only if her husband does not earn enough for two years: 2008 and 2015.[22] Turning first to the more recent year (2015), we see that countries vary significantly in their degree of disagreement, ranging from around 33% in Guatemala to over 80% in Brazil and Chile. There is a clear pattern of more progressive norms in higher-income countries. Whereas in LMI countries between around 35 and 60% of individuals disagree with this statement, in HI countries this range is between just under 70 and around 85%. Panama is a big outlier among the HI countries with significantly more conservative norms as indicated by only 45% disagreeing. Over time (between 2008 and 2015), beliefs in most countries have become more progressive as demonstrated by the fact that most data points lie above the 45 degree line. This trend is evident across poorer and higher-income countries. For example, in Brazil the degree of disagreement increased from just over 60% to nearly 85%, whereas in Nicaragua it went from around 45 to nearly 60%. There are exceptions to this trend in each of the income groups. In Guatemala, Panama, and Mexico the degree of disagreement has decreased over time. Panama stands out again as the biggest outlier with a very substantial of around 20 percentage points or around 30% of those who disagreed with the statement in 2008.

Figure 50: A Woman should work only if husband doesn't earn enough (% disagreeing)

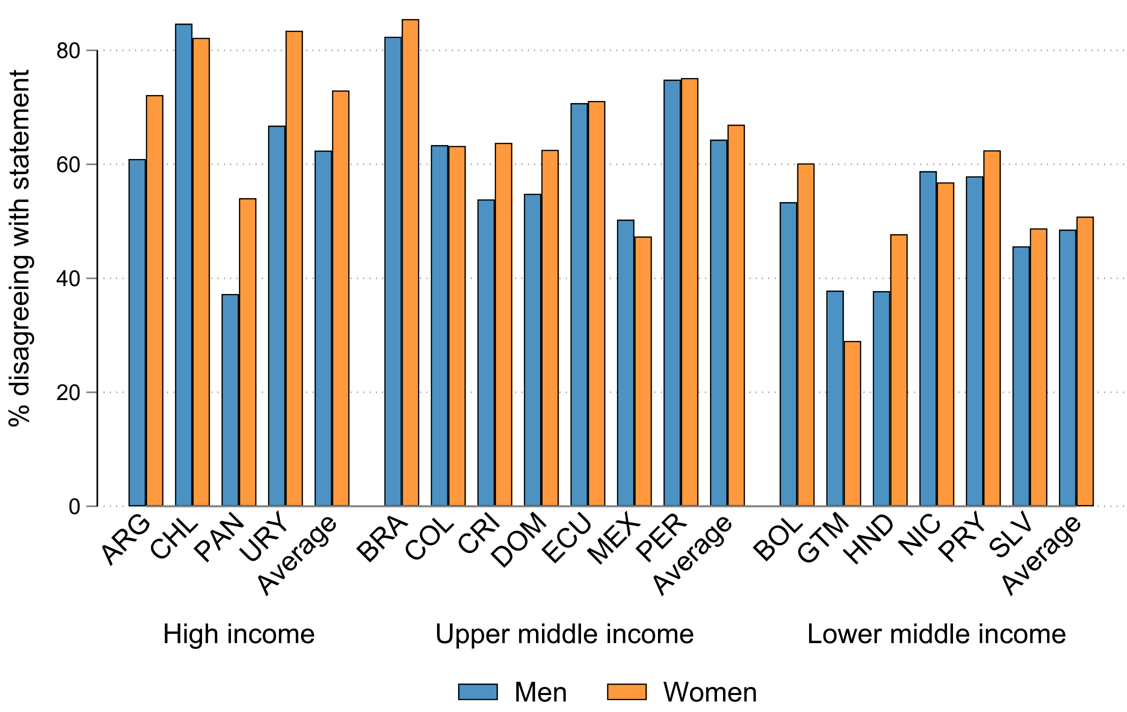


Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'Woman should work only if her husband doesn't earn enough' in 2008 and 2015. The different colors refer to the different country groups: HI, UMI, and LMI. *Source*: authors' own calculations based on Latinobarometro, 2008 and 2015.

Figure 51 disaggregates the aggregate proportion that disagrees in 2015 by gender. On average, men have more conservative views than women (lower disagreement rate). The gender gap is largest in HI countries, where this pattern holds in all countries but Chile and on average the proportion of men disagreeing with the statement is around 10 percentage points lower than among women. The average gender gaps in opinion are smaller in LMI and UMI countries and there is a sizable group of countries, including four out of the seven UMI countries, where the degree of disagreement is either very similar among men and women or even lower for women.

[22] An individual was said to disagree if they choose either "strongly disagree" or "disagree" as their response.

Figure 51: Woman should work only if her husband doesn't earn enough: % of individuals disagreeing

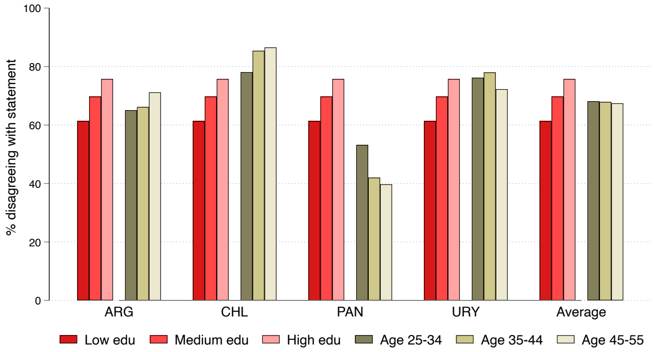


Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'A Woman should work only if her husband doesn't earn enough'. The average bars show unweighted means. *Source*: authors' own calculations based on Latinobarometro 2015.

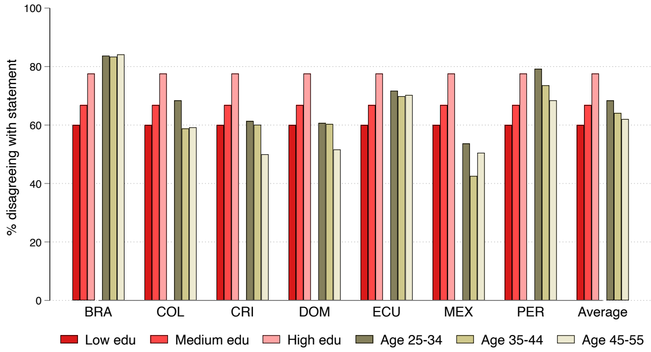
Throughout the region, without exception, there is a steep education gradient in how conservative beliefs are regarding women working outside the home (Figure 52). Those with more education - completed tertiary - tend to have more progressive norms compared to those in the least educated group (incomplete secondary). On average this education gap is largest in LMI countries at over 20 percentage points compared to close to half of that in HI countries. Several countries in the UMI group have gaps closer to the average for LMI countries. These include Colombia, Costa Rica, and Mexico. A number of countries across the income groups stand out for having especially conservative norms (low rates of disagreement) among the less educated group. In Panama, Mexico, Guatemala, Honduras, and El Salvador, less than half of those with incomplete secondary education disagreed with the statement that a woman should only work if her husband does not earn enough. In Guatemala this proportion is around a third.

Figure 52 also shows how views on women's work differs across cohorts, distinguishing between individuals between the ages of 25-34, 35-44, and 45-54, all in 2015. On the whole there is less of a gradient in how progressive these views are by cohort than by education. In some countries, younger cohorts are more progressive (e.g. Honduras and Panama), whereas in others (e.g., Argentina and Chile), older cohorts are more progressive.

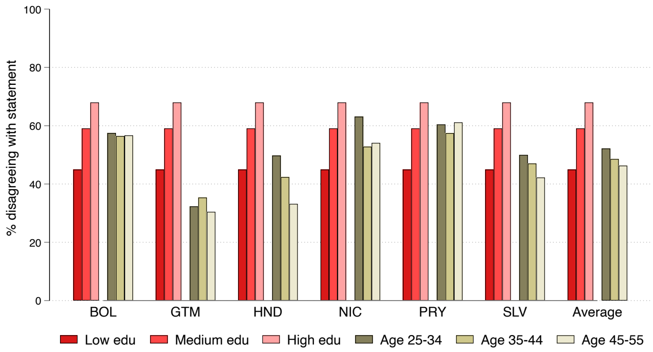
Figure 52: Woman has to work only if husband doesn't earn enough: Degree of disagreement with the statement, by education and cohort



(a) High income



(b) Upper middle income

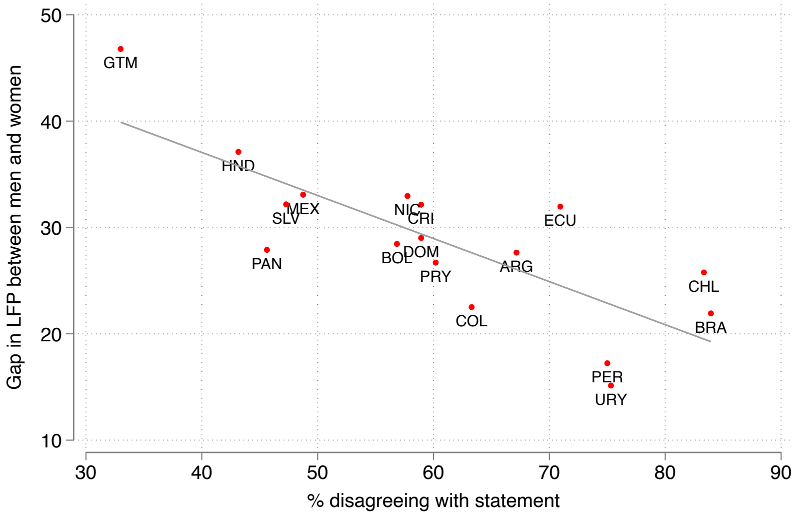


(c) Lower middle income

Note: Individuals aged 25-55 years old. This figure shows, by education level and cohort, the degree of disagreement ('disagree' or 'strongly disagree') with the statement 'A woman should work only if her husband doesn't earn enough'. 'Low edu' refers to individuals with up to a high school education completed, while 'high' indicates those who have completed tertiary education. *Source*: see note to Figure 51.

Figure 53 shows the correlation between average opinions regarding women's work and the size of the gender gap in labor force participation. As can be seen in the figure, in countries in which a higher fraction of the population disagrees with the statement regarding women's work, the gender gap in LFP is smaller.

Figure 53: Gender gap in LFP (M-F) and percent disagreeing with statement 'A woman should work only if husband doesn't earn enough'



Note: Individuals aged 25-55 years old. This figure shows the correlation between the degree of disagreement ('disagree' or 'strongly disagree') with the statement 'A woman should work only if her husband doesn't earn enough' and the gender gap in LFP (M-F). *Source*: authors' own calculations based on LAC household and time use surveys (GenLAC, several years) and Latinobarometro 2015.

Next we turn to beliefs regarding the roles that women are suited to, focusing on leadership in business and politics. Figure 54 plots the proportion of respondents age 25-55 who disagree (coded as before) with the statement that men make better business executives than women in 2012 and 2019; Figure 55 plots the same for the statement that men make better political leaders than women. On the whole, in both periods, the majority of respondents in all of the countries included in the analysis disagreed with these statements.

With respect to attitudes towards leadership in business, there is significantly less variation across countries in 2019 than in 2012. Whereas nearly a third of the respondents agreed with the statement in Brazil in 2012, in Peru this proportion was around 14%. By 2019 the gap between Brazil and Peru had shrunk by 7 percentage points, or 47% of the original gap. Attitudes towards political leadership also became more progressive during this time period. This is especially the case in Uruguay, where by 2019 nearly 100% of respondents disagreed compared to 80% seven years earlier and in Brazil where the level of disagreement went up by over 10 percentage points. from 72% in 2012 (Figure 55).

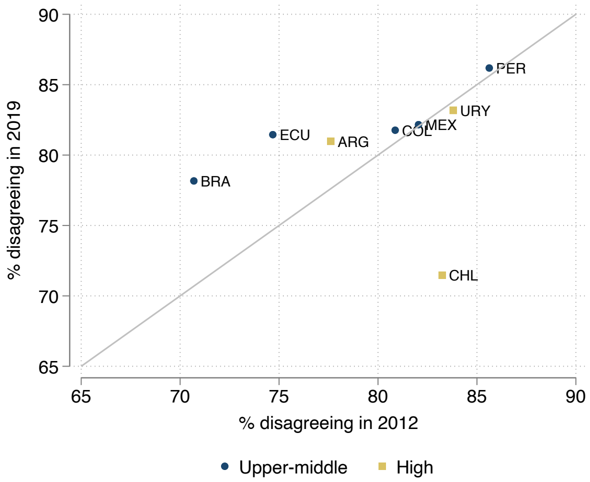
Chile is a clear outlier relative to the general trend of increasingly progressive views over time. Both with respect to business and political leadership, the proportion of individuals who disagreed dropped sharply over this time period.

Throughout the region men are more likely to agree than women with the propositions that men make better business and political leaders than women (Figures 56 and 57). The pattern in gender differences is similar for the two statements with the largest gender gaps of close to 20 percentage points observed in Chile.

As in the case of beliefs relating to women's LFP discussed above, there are clear education gradients in views on women's capacity for business and political leadership roles (Figures 58 and 59); those with less education tend to hold more conservative views. For example, in Colombia, which has one of the steeper education gradients in responses to both statements, there is a gap of around 20 percentage points in the proportion of individuals disagreeing between those in the least and most educated groups.

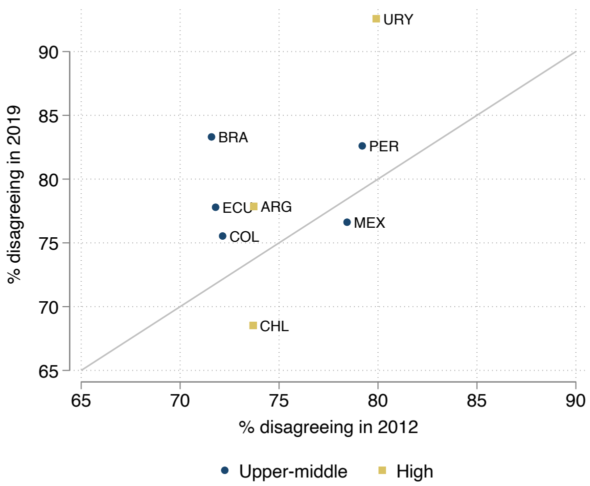
In contrast to education, there is less of a a clear-cut pattern by cohort. In some countries, including Argentina, Colombia, Ecuador, and Nicaragua, there is a somewhat higher level of disagreement with both statements among those in the youngest cohort (age 25-34) than those in the older cohorts as we would expect if more recent cohorts have more progressive norms. However, there are also several countries with the opposite pattern or with essentially no differences across cohorts.

Figure 54: Men make better business executives than women (% disagreeing)



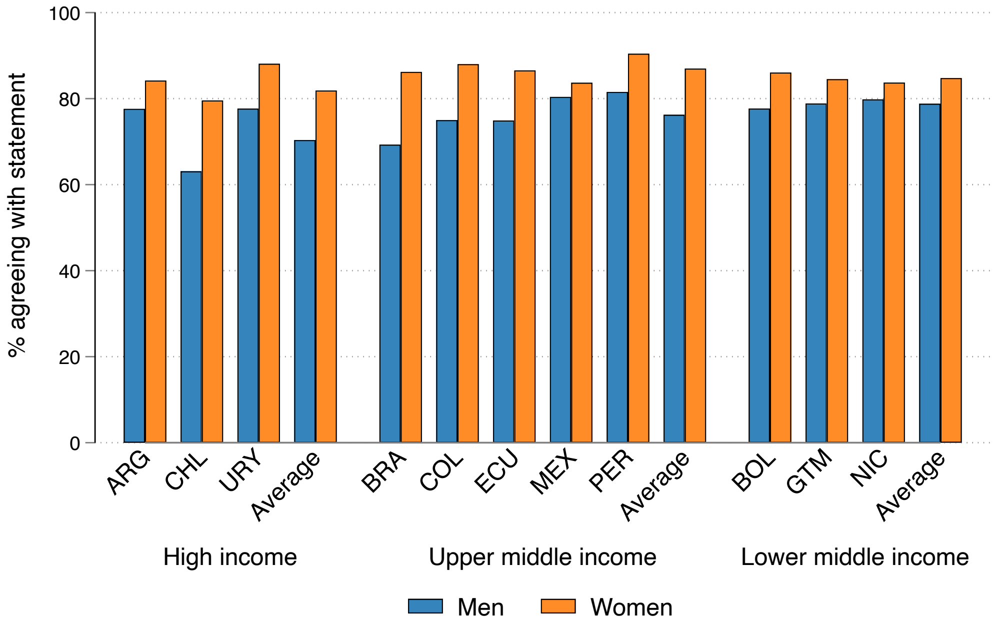
Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'Men make better business executives than women.' *Source*: authors' own calculations based on Latinobarometro, 2012 and 2019.

Figure 55: Men make better political leaders than women (% disagreeing)



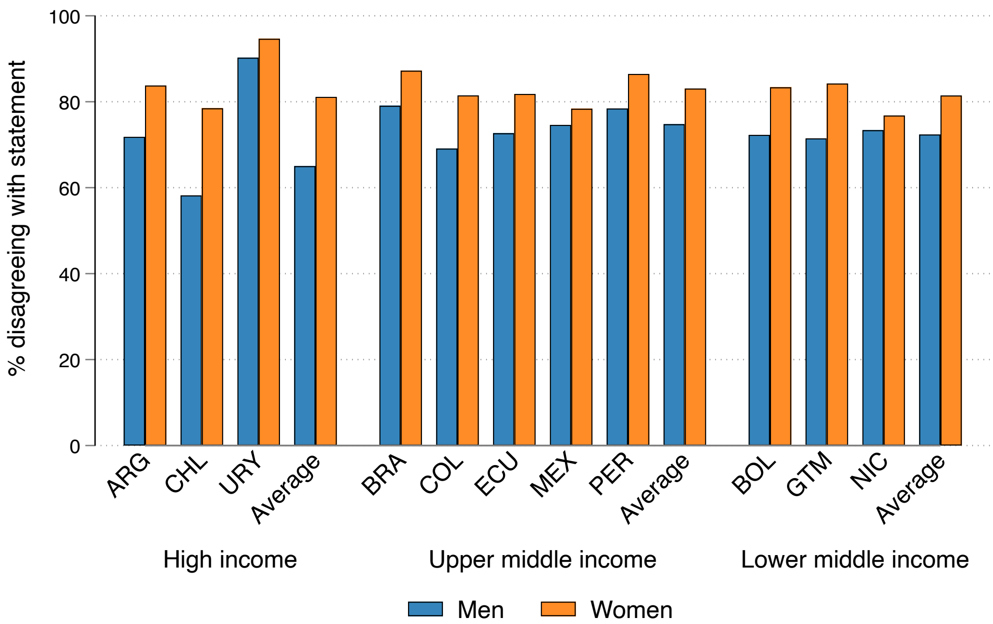
Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'Men make better political leaders than women.' The average bars show unweighted means. *Source*: see note to Figure 54.

Figure 56: Men make better business executives than women: % disagreeing



Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'Men make better business executives than women.'The average bars show unweighted means. *Source*: authors' own calculations based on Latinobarometro circa 2019.

Figure 57: Men make better political leaders than women: % disagreeing



Note: Individuals aged 25-55 years old. This figure shows the percentage of individuals who disagree or strongly disagree with the statement 'Men make better political leaders than women.' The average bars show unweighted means. *Source*: see note to Figure 56.

Figure 58: Men make better business executives than women: % disagreeing

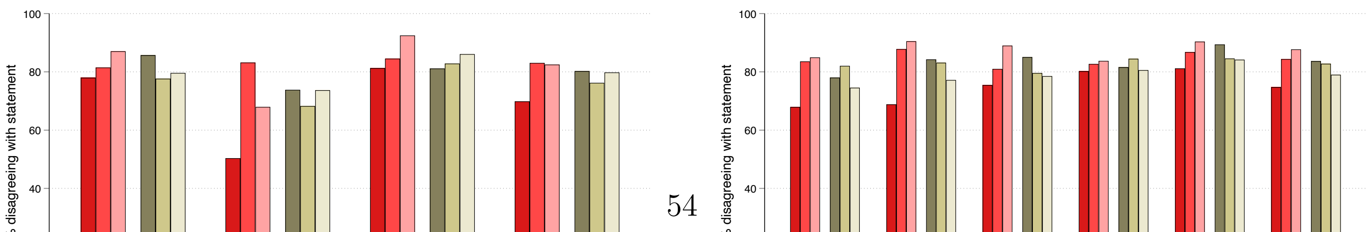
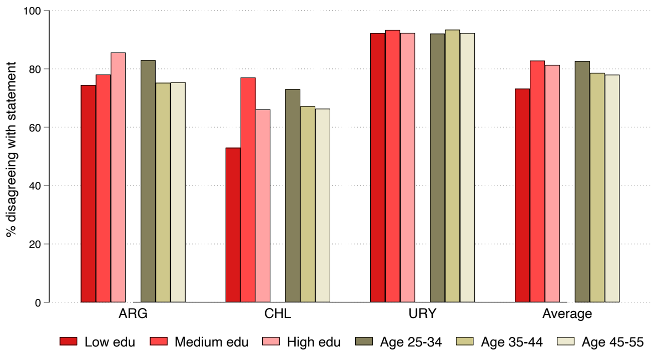
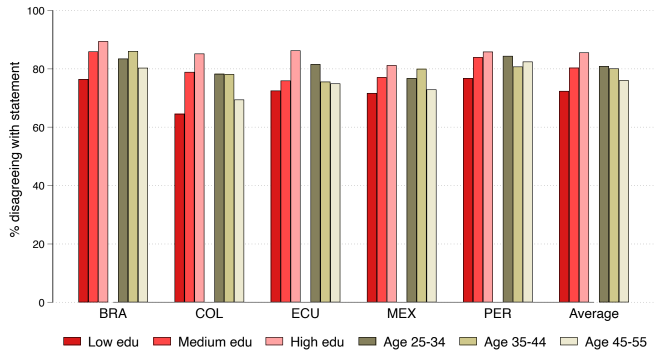


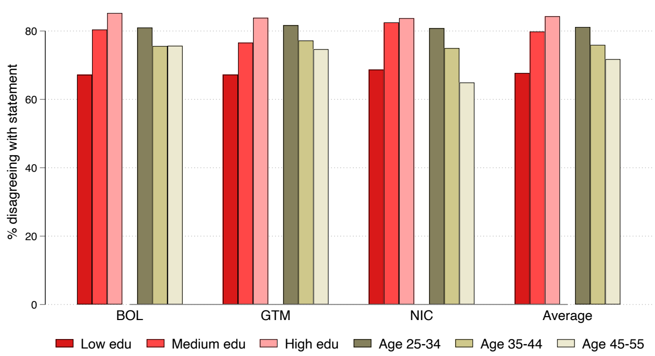
Figure 59: Men make better political leaders than women: % disagreeing



(a) High income



(b) Upper middle income



(c) Lower middle income

Note: Individuals aged 25-55 years old. This figure shows, by education level and cohort, the degree of disagreement ('disagree' or 'strongly disagree') with the statement 'Men make better political leaders than women.' 'Low edu' refers to individuals with up to a high school education completed, while 'high' indicates those who have completed tertiary education. *Source*: see note to Figure 56.

3.6 Conclusion

This chapter examined gender inequality in Latin America focusing on education and work as two critical spheres in which gender inequality is generated and providing a current snapshot as well as a historical perspective. The picture that emerges is mixed. On the one hand, girls and women continue to be disadvantaged relative to boys and men in several key indicators. There are, however, important dimensions in which the reverse is true and areas in which there have been significant reductions in inequality over time. Moreover, cross-country comparisons, analysis of interactions between gender and socio-economic inequalities, and the life-cycle perspective yield insights into promising directions for future research on the mechanisms underlying the trends that we document. In this concluding section we draw out some of the key findings as well as suggestions for future work.

Starting with areas in which women continue to perform worse than men, in the sphere of education adolescent girls lag behind in attainment and confidence in mathematics. They are also much less likely to expect to work in STEM and, consistently, women are strongly underrepresented in STEM subjects at the tertiary education level and much less likely to work in STEM in adulthood. This matters because labor-market returns to STEM subjects are significantly higher than in Health or Education, areas in which women tend to be over-represented at tertiary level. Strikingly, these large disparities exist in spite of widespread agreement among the adult population that women have the same capacity for science and technology as men.

In the work sphere, in Latin America as in many other parts of the world, women are significantly less likely to work for pay and, irrespective of whether they are in the labor market, they spend much more time on unpaid, non-market work including household chores and care than men. In market work, there are persistent differences in the quality of jobs men and women do, especially among those with less education, and large wage gaps persist especially after conditioning on individual and occupational characteristics. If working women had the same characteristics as working men with respect to education, location of residence, sector of employment and occupation, then at constant wages the gender wage gap would have been at least 50% larger in 2019; there has been no improvement in this feature over the last 20 year. A key factor impacting women's labor market trajectories but not men's is becoming a parent. This results in declines in labor force participation of mothers of up to 40%, with little evidence of recovery in the medium term. Gender gaps in labor force participation are strongly correlated with work-related gender norms. Poorer countries and individuals with lower levels of education have greater gender gaps in labor market participation as well as more conservative gender norms. For example, over half of the adult population in several of the poorest countries in the region subscribe to the view that a woman should work only if her husband does not earn enough.

There are some grounds for optimism, however, and there are several important areas in which there have been significant improvements over the last 20 years. Notably, among secondary school students the male-female gap in mathematics has fallen as has the male disadvantage in reading. In the work sphere, there have been significant increases in female labor force participation. Furthermore, although steep education gradients in FLFP remain, women with low education levels have seen the largest increases over the last 20 years, especially in the poorest group of LA countries.

The objective of this chapter is to document key trends in gender inequality. While understanding the mechanisms underlying these is beyond the scope of our work, our work can be useful in highlighting some potential avenues for future research.

For example, the life-cycle perspective in the analysis allows us to clearly see that gender gaps in mathematics are not evident at early stages of primary school and start to emerge between 3rd and 6th grade (ages 8/9-11/12). Currently, "middle childhood" is a relatively neglected life-cycle stage in research compared to early childhood and adolescence (Voss et al., 2023). A fruitful avenue in future research on gender inequalities in STEM subjects may, therefore, be to better understand the process of acquisition of math skills in middle childhood, including learning from interventions that work to boost math skills in this age-group, as well as how gender inequalities interact with key inputs such as teachers.

Another potential avenue links to our findings on gender inequalities in the completion of secondary and tertiary education. Here boys tend to be at a disadvantage relative to girls, especially in the wealthier countries in the region and similar to what is found in the vast majority of countries. An in-depth understanding of drivers of this trend could help design effective interventions to prevent these gaps opening up or widening as the poorer countries in the region become wealthier. Peru is an interesting context for further research into these inequalities. Despite having higher secondary and tertiary education completion rates than many wealthier countries, there is near gender parity in completion of both.

Turning to adulthood, there is a clear pattern of larger increases in FLFP across cohorts in wealthier countries than in poorer ones. However, comparisons with countries in the region as well as with countries outside LA suggest that economic development alone is insufficient to achieve improvements in this domain. For example, while there is significant stagnation in women's LFP in recent cohorts in the US, Spain has seen very large increases. Similarly within LA, among the UMI countries, Brazil and Ecuador have experienced steady increases in FLFP for each subsequent cohort whereas Colombia stagnated and the increases in FLFP ended with the the 1960's cohort. What insights can be gained from the drivers of these different experiences that might inform policy in contexts where there has been little progress?

These are just some examples of the ways in which this chapter provides not only a snapshot of the current situation and recent trends, but also can help motivate future research into drivers of gender inequality in Latin America and policy tools that could be used to tackle it.

To conclude, as we have documented, LA has seen important progress with respect to several key aspects of gender equality. Progress has not been uniform across countries nor among all dimensions, however, and there are important cases of stagnation and even regression in various areas. The material presented here is intended to inspire and inform policy actions in these spheres and spur further research in the critical areas that we have examined, as well as in other dimensions of gender inequality such as gender violence, health care, poverty, and political representation. Finally, we have demonstrated how a cross-country, dynamic perspective can enrich the analysis highlighting the great potential for learning from the wealth of different experiences in LA across space and time.

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A Appendix: Tables and Figures

Table A.1: Test score regressions using TERCE for 3rd grade students (2013)

	High income countries							
Country	ARG		CHL		PAN		URY	
Reading								
Female	10.92***	11.81***	9.606***	10.36***	8.139***	8.902***	14.19***	12.60***
	(2.838)	(2.948)	(2.527)	(2.717)	(3.059)	(3.154)	(3.334)	(3.423)
College parents		36.86***		41.06***		56.76***		47.89***
		(6.566)		(4.621)		(6.194)		(7.563)
Female x College parents		0.0112		-7.494		5.601		15.02
		(9.768)		(6.570)		(9.032)		(10.88)
	2,589	2,589	2,955	2,955	2,372	2,372	1,937	1,937
Math								
Female	5.612*	6.323*	-1.382	-1.861	6.858**	8.168**	12.46***	12.94***
	(3.121)	(3.240)	(2.646)	(2.833)	(3.066)	(3.174)	(3.906)	(3.992)
College parents		42.68***		45.52***		60.99***		74.94***
		(7.234)		(4.761)		(6.115)		(8.273)
Female x College parents		1.136		-0.327		-7.805		-3.955
		(10.59)		(6.784)		(8.934)		(12.03)
Observations	2,608	2,608	3,110	3,110	2,400	2,400	1,925	1,925

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A.2: Test score regressions using TERCE for 3rd grade students (2013)

	Upper-middle income countries											
Country	BRA		COL		CRI		DOM		MEX		PER	
Reading												
Female	13.08***	12.69***	13.53***	14.55***	8.147***	8.077***	16.71***	16.82***	11.04***	11.74***	0.491	-0.463
	(2.936)	(3.045)	(2.486)	(2.562)	(2.546)	(2.650)	(3.181)	(3.545)	(2.894)	(3.029)	(2.483)	(2.560)
College parents		41.42***		63.55***		37.67***		29.09***		49.98***		52.47***
		(6.723)		(5.064)		(5.555)		(5.424)		(5.815)		(5.370)
Female x College parents		5.199		-13.33*		1.922		2.387		-3.412		4.522
		(9.586)		(6.962)		(8.066)		(7.603)		(8.297)		(7.698)
	2,405	2,405	2,977	2,977	2,552	2,552	2,090	2,090	2,488	2,488	3,458	3,458
Math												
Female	5.245	4.278	1.928	3.670	-4.127	-5.514**	4.107	2.702	2.802	2.010	-8.136***	-9.307***
	(3.466)	(3.533)	(2.783)	(2.919)	(2.649)	(2.754)	(3.070)	(3.383)	(3.185)	(3.338)	(2.738)	(2.823)
College parents		66.30***		54.62***		37.24***		30.92***		50.08***		58.82***
		(8.196)		(5.423)		(5.971)		(5.223)		(6.485)		(5.823)
Female x College parents		9.433		-7.736		7.921		10.60		4.470		5.555
		(11.47)		(7.741)		(8.388)		(7.390)		(9.097)		(8.327)
Observations	2,412	2,412	2,869	2,869	2,551	2,551	2,254	2,254	2,493	2,493	3,451	3,451

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A.3: Test score regressions using TERCE for 3rd grade students (2013)

	Lower-middle income countries									
Country	ECU		GTM		HND		NIC		PRY	
Reading										
Female	-0.661	-0.619	-1.540	-2.643	3.165	1.777	0.883	0.899	11.25***	11.94***
	(2.372)	(2.498)	(2.559)	(2.566)	(2.588)	(2.660)	(2.798)	(2.951)	(3.309)	(3.511)
College parents		41.05***		57.56***		44.65***		37.13***		42.81***
		(4.555)		(8.720)		(7.005)		(5.707)		(6.145)
Female x College parents		6.026		21.25*		1.317		5.032		1.688
		(6.675)		(12.29)		(9.212)		(8.114)		(9.109)
	3,499	3,499	3,122	3,122	2,797	2,797	2,555	2,555	2,056	2,056
Math										
Female	-3.157	-0.350	-5.519**	-6.336**	1.706	-1.317	-7.883***	-5.927**	-4.034	-4.329
	(2.696)	(2.851)	(2.642)	(2.632)	(2.990)	(3.066)	(2.716)	(2.862)	(3.676)	(3.897)
College parents		51.06***		73.87***		41.06***		45.42***		40.31***
		(5.069)		(8.429)		(8.247)		(5.572)		(7.194)
Female x College parents		-12.21		14.92		20.10*		-12.33		7.054
		(7.587)		(12.02)		(10.89)		(7.884)		(10.55)
Observations	3,461	3,461	3,152	3,152	2,717	2,717	2,670	2,670	2,144	2,144

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table A.4: Test score regressions using TERCE for 6th grade students (2013)

	High income countries							
Country	ARG		CHL		PAN		URY	
Reading								
Female	17.63***	17.13***	13.06***	12.16***	14.06***	13.58***	14.18***	11.75***
	(3.154)	(3.250)	(2.869)	(3.102)	(3.224)	(3.389)	(3.900)	(3.959)
College parents		41.29***		34.73***		58.78***		62.19***
		(8.306)		(5.355)		(6.296)		(9.876)
Female x College parents		6.603		2.504		-1.354		22.12
		(11.71)		(7.621)		(8.649)		(13.68)
	2,766	2,766	3,384	3,384	2,583	2,583	1,979	1,979
Math								
Female	-7.785**	-8.928***	-5.727**	-6.981**	2.318	1.737	-8.197*	-11.50***
	(3.153)	(3.274)	(2.913)	(3.129)	(3.057)	(3.246)	(4.287)	(4.353)
College parents		28.25***		56.31***		45.33***		68.79***
		(8.041)		(5.313)		(5.923)		(10.56)
Female x College parents		12.11		0.723		2.239		35.08**
		(11.31)		(7.345)		(8.286)		(14.60)
Observations	2,677	2,677	3,261	3,261	2,671	2,671	1,924	1,924

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table A.5: Test score regressions using TERCE for 6th grade students (2013)

	Upper-middle income countries											
Country	BRA		COL		CRI		DOM		MEX		PER	
Reading												
Female	11.67***	12.02***	6.564**	4.468	4.058	2.811	10.79***	9.075***	5.789*	6.865**	0.313	-2.265
	(3.537)	(3.660)	(2.876)	(2.984)	(2.973)	(3.097)	(2.874)	(3.246)	(3.286)	(3.404)	(2.932)	(3.038)
College parents		43.48***		49.99***		38.49***		27.42***		69.89***		63.61***
		(8.341)		(6.166)		(6.561)		(4.663)		(6.483)		(6.157)
Female x College parents		10.01		12.30		9.685		8.681		-8.844		4.138
		(12.29)		(8.854)		(9.424)		(6.590)		(9.260)		(8.486)
	2,236	2,236	3,287	3,287	2,540	2,540	2,656	2,656	2,566	2,566	3,394	3,394
Math												
Female	-10.20***	-11.24***	-17.02***	-18.77***	-10.43***	-11.42***	-4.738*	-6.114**	-7.475**	-6.027*	-24.90***	-27.74***
	(3.272)	(3.374)	(2.598)	(2.691)	(2.807)	(2.920)	(2.687)	(3.017)	(3.371)	(3.529)	(3.383)	(3.502)
College parents		39.45***		60.27***		43.29***		26.78***		65.80***		76.45***
		(7.830)		(5.712)		(6.300)		(4.389)		(6.618)		(6.964)
Female x College parents		21.55*		-4.200		6.325		4.973		-6.619		9.883
		(11.48)		(7.809)		(8.893)		(6.281)		(9.517)		(9.633)
Observations	2,210	2,210	3,243	3,243	2,509	2,509	2,764	2,764	2,681	2,681	3,711	3,711

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A.6: Test score regressions using TERCE for 6th grade students (2013)

	Lower-middle income countries									
Country	ECU		GTM		HND		NIC		PRY	
Reading										
Female	3.447	5.111*	-2.150	-1.129	7.959***	8.195***	12.54***	12.59***	12.32***	17.71***
	(2.730)	(2.855)	(2.729)	(2.725)	(2.713)	(2.756)	(2.766)	(2.971)	(3.472)	(3.655)
College parents		66.37***		73.07***		62.39***		41.66***		65.49***
		(5.051)		(7.575)		(6.490)		(5.267)		(6.337)
Female x College parents		-11.09		19.58		2.266		-3.940		-24.27**
		(7.432)		(12.13)		(9.367)		(7.209)		(9.542)
	3,765	3,765	3,118	3,118	2,990	2,990	2,703	2,703	2,302	2,302
Math										
Female	-10.51***	-10.97***	-20.15***	-18.12***	-10.03***	-9.895***	-7.853***	-9.456***	-2.971	-0.881
	(2.693)	(2.864)	(2.714)	(2.705)	(2.850)	(2.920)	(2.524)	(2.695)	(3.582)	(3.820)
College parents		47.70***		89.02***		60.18***		34.21***		51.38***
		(4.979)		(7.688)		(6.747)		(4.905)		(6.818)
Female x College parents		2.623		-9.924		-0.564		6.608		-13.17
		(7.311)		(11.94)		(9.563)		(6.769)		(9.880)
Observations	3,893	3,893	3,118	3,118	2,958	2,958	2,829	2,829	2,394	2,394

Robust standard errors are reported in parentheses. Calculations based on TERCE 2013. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A.7: Test score regressions using PISA for 15 year-old students (2018)

	High income countries							
Country	ARG		CHL		PAN		URY	
Reading								
Female	16.05***	12.68***	19.81***	23.58***	14.37***	16.2***	23***	23.41***
	(2.57)	(3.1)	(3.64)	(4.1)	(2.7)	(3.18)	(3.24)	(3.92)
College parents		53.85***		47.65***		60.95***		59.71***
		(5.24)		(4.24)		(6.4)		(5.59)
Female x College parents		11.92**		-5.85		-4.52		2.86
		(5.69)		(5.28)		(5.46)		(6.49)
Math								
Female	-15.43**	-16.33***	-7.47**	-3.79	7.66**	5.23	-8.33**	-6.73*
	(2.25)	(2.82)	(3.65)	(3.99)	(3.32)	(3.83)	(3.31)	(3.71)
College parents		50.55***		46.6***		51.84***		56.7***
		4.84		(3.81)		(5.54)		(5.43)
Female x College parents		5.32		-5.69		-6.35		-2.01
		(5.12)		(4.42)		(5.54)		(6.1)
Observations	11,975	11,975	7,621	7,621	6,270	6,270	5,263	5,263

Robust standard errors are reported in parentheses. Calculations based on PISA 2018. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table A.8: Test score regressions using PISA for 15 year-old students (2018)

	Upper-middle income countries											
Country	BRA		COL		CRI		DOM		MEX		PER	
Reading												
Female	25.68***	22.76***	10.33***	10.37***	14.38***	18.28***	31.08***	27.63***	11.12***	9.79***	10.52***	11.59***
	(2.11)	(2.6)	(3.29)	(3.15)	(3.34)	(3.42)	(2.41)	(2.86)	(2.52)	(2.92)	(3.04)	(2.98)
College parents		50.83***		49.25***		50.4***		24.35***		39.09***		55.12***
		(4.22)		(5.53)		(4.18)		(4.83)		(4.88)		(4.61)
Female x College parents		7.54*		6.33		-4.22		11.72**		6.96		-4.46
		(4.35)		(5.55)		(4.95)		(4.92)		(5.08)		(5.02)
Math												
Female	-8.6***	-9.65***	-19.52***	-18.85***	-17.67***	-16.2***	3.15	2.43***	-11.75***	-10.26***	-16.33***	-14.14***
	(2.19)	(2.43)	(3.47)	(3.41)	(3.93)	(3.48)	(2.76)	(3.05)	(2.58)	(2.97)	(2.85)	(3.17)
College parents		49.32***		43.04***		39.65***		26.45***		35.03***		51.07***
		(4.08)		(6.11)		(4.63)		(5.12)		(4.78)		(4.24)
Female x College parents		2.43		3.25		0.53		4.8		-2.36		-6.85
		(4.1)		(5.55)		(4.99)		(4.8)		(4.52)		(4.78)
Observations	10,691	10,691	7,522	7,522	7,221	7,221	5,674	5,674	7,299	7,299	6,086	6,086

Robust standard errors are reported in parentheses. Calculations based on PISA 2018. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table A.9: Adult's skills

	ARG	BOL	BRA	COL	ECU	MEX	PAN	PER	URY
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A					Raven PMT				
Women	0.120	-0.211	-0.131	-0.071	-0.081	-0.091	-0.096	-0.166	0.083
	(0.074)	(0.077)***	(0.075)*	(0.073)	(0.069)	(0.070)	(0.098)	(0.075)**	(0.075)
Observations	721	670	731	730	672	737	437	693	742
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel B					Numerical skills				
Women	-0.036	-0.436	-0.239	-0.234	-0.228	-0.315	-0.326	-0.151	-0.163
	(0.074)	(0.085)***	(0.084)***	(0.073)***	(0.078)***	(0.074)***	(0.100)***	(0.087)*	(0.078)**
Observations	702	536	570	709	612	701	386	533	657
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel C					Verbal conceptualization				
Women	-0.030	-0.408	-0.125	0.230	-0.059	-0.243	-0.081	-0.048	0.071
	(0.077)	(0.080)***	(0.077)	(0.075)***	(0.077)	(0.075)***	(0.094)	(0.077)	(0.075)
Observations	721	670	731	729	672	709	437	676	739

Note: All these variables are standardized (mean 0, and SD 1). The standardization was done taking into account the whole sample (ages 15 to 55 and the 10 major cities of the 9 countries depicted plus Venezuela). The regression shown in this table was computed for people aged 25 to 55 years old. Robust standard errors are reported in parentheses. Calculations based on PISA 2018. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. *Source*: authors' own calculations based on ECAF 2015 (CAF-development bank of Latin America).

Table A.10: Math self-perception and PISA mathematics score

	(1) LA	(2) ARG	(3) BRA	(4) CHL	(5) COL	(6) CRI	(7) MEX	(8) PER	(9) URY
Math score	0.0657***	0.0620***	0.0451***	0.1159***	0.0563***	0.0972***	0.0984***	0.0496***	0.0948***
	(0.0017)	(0.0075)	(0.0037)	(0.0064)	(0.0056)	(0.0093)	(0.0026)	(0.0058)	(0.0074)
Female	-8.1301***	-13.3829***	-9.9063***	-9.3920**	-16.6369***	-11.8803**	-4.8521***	0.6756	-12.5151***
	(0.9713)	(4.2537)	(2.1325)	(3.9487)	(3.1385)	(5.5784)	(1.6205)	(3.1447)	(4.3967)
Math score * female	0.0044*	0.0155	0.0070	0.0029	0.0306***	0.0109	-0.0004	-0.0165**	0.0110
	(0.0024)	(0.0106)	(0.0053)	(0.0092)	(0.0080)	(0.0135)	(0.0038)	(0.0082)	(0.0103)
Constant	23.6258***	25.6125***	32.3870***	-1.0126	34.5165***	16.0082***	11.2341***	37.0945***	12.9666***
	(0.7497)	(3.0833)	(1.5339)	(2.8327)	(2.2789)	(3.9883)	(1.1354)	(2.2785)	(3.2164)
Observations	56,528	3,584	11,581	4,395	5,443	2,819	21,881	3,624	3,201
Mean dep. var.	48.25	46.15	46.32	43.96	53.39	51.53	49.53	52.94	48.09
Country FE	Yes	No	No	No	No	No	No	No	No

Note: The self-perception index is derived from each student's responses to five questions about their level of agreement with specific statements related to their math competence, as defined in the text. Robust standard errors are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. *Source*: authors' own calculations based on PISA 2012.

Table A.11: Market and non-market weekly working hours

	All			Employed		
	Market	Non Market	Total	Market	Non Market	Total
Panel A: Low-middle income countries						
GTM						
Women	−30.52***	39.50***	8.98***	−17.59***	27.20***	9.61***
Constant	38.06***	9.65***	47.71***	35.65***	11.51***	47.17***
PRY						
Women	−25.35***	37.55***	12.20***	−13.35***	29.36***	16.02***
Constant	43.04***	17.64***	60.68***	43.29***	18.03***	61.32***
SLV						
Women	−27.62***	31.02***	3.40***	−4.84**	15.78***	10.94***
Constant	48.17***	12.49***	60.66***	47.53***	14.61***	62.13***
Panel B: Upper-middle income countries						
COL						
Women	−26.93***	44.52***	17.59***	−2.81***	23.55***	20.74***
Constant	47.31***	20.26***	67.57***	46.44***	22.33***	68.77***
CRI						
Women	−28.97***	36.72***	7.75***	−8.75***	21.35***	12.59***
Constant	44.93***	20.13***	65.06***	45.11***	23.03***	68.14***
ECU						
Women	−29.48***	43.41***	13.48***	−8.47***	34.21***	25.09***
Constant	47.20***	10.51***	57.39***	48.56***	12.99***	61.06***
MEX						
Women	−33.40***	49.67***	16.27***	−16.04***	38.99***	22.95***
Constant	51.44***	19.31***	70.75***	52.29***	21.37***	73.66***
PER						
Women	−19.86***	34.63***	4.75***	−18.04***	26.89***	9.67***
Constant	50.66***	15.37***	65.27***	50.98***	15.52***	65.68***
Panel C: High income countries						
ARG						
Women	−26.70***	39.58***	12.90***	−13.43***	27.67***	14.24***
Constant	44.83***	19.92***	64.74***	44.44***	21.79***	66.22***
CHL						
Women	−5.63***	35.03***	29.40***	−0.10	28.66***	28.56***
Constant	16.51***	27.00***	43.51***	16.58***	27.70***	44.28***
URY						
Women	−9.69***	26.14***	6.72***	−10.24***	19.43***	10.18***
Constant	46.62***	19.67***	65.20***	47.17***	20.20***	66.39***
USA						
Women	−16.29***	12.40***	−3.89***	−7.97***	6.90***	−1.07
Constant	39.77***	14.68***	54.45***	39.46***	14.94***	54.40***

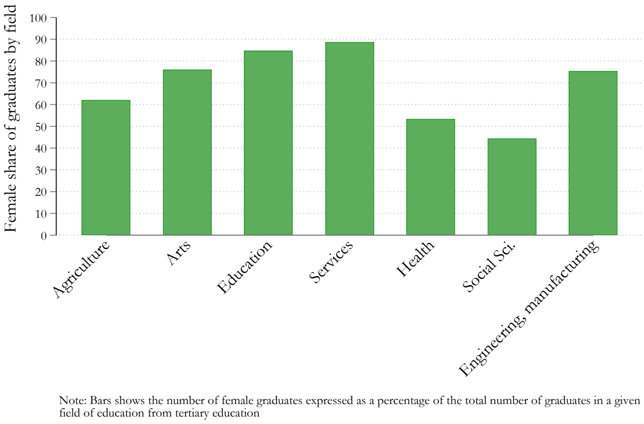
Note: Married individuals aged 25-45 years old. Columns 1 to 3 show values for the sample of married individuals. Columns 4 to 6 show values for the sample of employed married women or men whose partners are employed. Non-market hours include care activities and household chores. Each variable is equal to zero when the individual does not do such an activity. Source: authors' own calculations based on time use surveys (GenLAC). The year of the time use surveys ranges from 2010 to 2017 (see tables B.4 and B.1 in Appendix B, respectively). ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A.12: Oaxaca-Blinder Decomposition

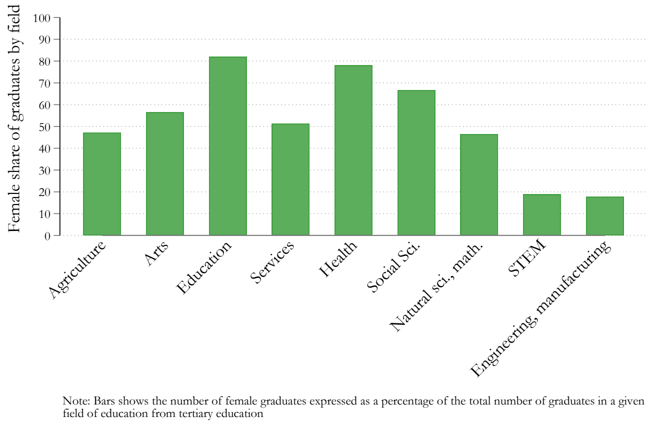
	Contribution of Explanatory Variables to the Gender Wage Gap												F/M log wage	
	log points						Percent of gender gap explained							
	Age + location	Educ.	Job charact.	Total expl. gap	Total unexpl. gap	Total pay gap	Age + location	Educ.	Job charact.	Total expl. gap	Total unexpl. gap	Total pay gap	Unadjusted	Adjusted
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: LMI														
BOL	0.0098	-0.0044	-0.1042	-0.0988	0.2978	0.1990	4.9%	-2.2%	-52.4%	-49.7%	149.7%	100%	82.0%	74.2%
NIC	0.0224	-0.0388	-0.1633	-0.1796	0.2171	0.0375	59.9%	-103.5%	-435.8%	-479.4%	579.4%	100%	96.3%	80.5%
SLV	0.0003	-0.0148	-0.1456	-0.1602	0.1592	-0.0010	-27.6%	1477.0%	14487.7%	15937.1%	-15837.1%	100%	100.1%	85.3%
HND	-0.0728	-0.0952	-0.4035	-0.5715	0.3075	-0.2640	27.6%	36.1%	152.8%	216.5%	-116.5%	100%	130.2%	73.5%
Panel B: UMI														
PER	-0.0140	0.0005	0.0113	-0.0022	0.2673	0.2651	-5.3%	0.2%	4.3%	-0.8%	100.8%	100%	76.7%	76.5%
DOM	-0.0004	-0.0493	-0.0296	-0.0792	0.2770	0.1978	-0.2%	-24.9%	-14.9%	-40.0%	140.0%	100%	82.1%	75.8%
MEX	-0.0064	-0.0306	-0.1256	-0.1626	0.3104	0.1478	-4.3%	-20.7%	-85.0%	-110.0%	210.0%	100%	86.3%	73.3%
ECU	0.0028	-0.0240	-0.0949	-0.1160	0.1996	0.0836	3.4%	-28.7%	-113.5%	-138.8%	238.8%	100%	92.0%	81.9%
BRA	-0.0093	-0.0699	-0.0500	-0.1292	0.2110	0.0818	-11.4%	-85.5%	-61.1%	-158.1%	258.1%	100%	92.1%	81.0%
COL	-0.0139	-0.0674	-0.0848	-0.1662	0.2128	0.0465	-29.9%	-144.9%	-182.3%	-357.2%	457.2%	100%	95.5%	80.8%
CRI	0.0061	-0.0571	-0.1273	-0.1784	0.1676	-0.0107	-56.6%	531.6%	1185.5%	1660.5%	-1560.5%	100%	101.1%	84.6%
Panel C: HI														
ARG	-0.0039	-0.0651	-0.0734	-0.1424	0.1897	0.0473	-8.3%	-137.8%	-155.2%	-301.3%	401.3%	100%	95.4%	82.7%
CHL	0.0003	-0.0298	-0.0234	-0.0529	0.1827	0.1298	0.2%	-22.9%	-18.0%	-40.7%	140.7%	100%	87.8%	83.3%
PAN	-0.0124	-0.0854	-0.0859	-0.1837	0.1816	-0.0020	611.0%	4218.6%	4242.4%	9072.0%	-8972.0%	100%	100.2%	83.4%
URY	-0.0030	-0.0478	-0.0675	-0.1184	0.1838	0.0655	-4.6%	-73.0%	-103.2%	-180.8%	280.8%	100%	93.7%	83.2%
US	0.0004	-0.0226	0.0400	0.0178	0.1597	0.1775	0.2%	-12.7%	22.5%	10.0%	90.0%	100%	83.7%	85.2%

Note: Workers aged 25-55 years old, working at least twenty hours a week. The model used for the Oaxaca-Blinder decomposition controls for age, age squared, region of residence, an indicator for living in a rural area, education, sector, occupation (2-digits codes ISCO), an indicator for full-time worker (35+ hours a week), and another for working in the informal sector. Columns 1 to 3 show the result of multiplying the male-female difference in the specified set of variables by the male log wage coefficients associated with those variables. 'Age + location' combines the coefficients of age, region, and urban/rural areas. 'Educ.' aggregates the education level dummies, while 'job characteristics' sums up the explanatory contribution of sector, occupation, full-time, and informal dummies. Column 4 displays the total explained part in the Oaxaca-Blinder decomposition, and column 5 presents the unexplained part. Columns 7 to 12 show the ratio - multiplied by 100 - of the respective values shown in columns 1 to 6 to the total pay gap (i.e., column 6). The unadjusted gender wage gap (column 13) is calculated as the inverse of the exponential of the values shown in column 6, and the adjusted gender gap (column 14) is calculated as the inverse of the exponential of the values shown in column 5. *Source*: authors' own calculations based on LAC household surveys (GenLAC) and the American Community Survey. Survey year is 2019 or the latest year available up to 2019 (see Table B.1 in Appendix B).

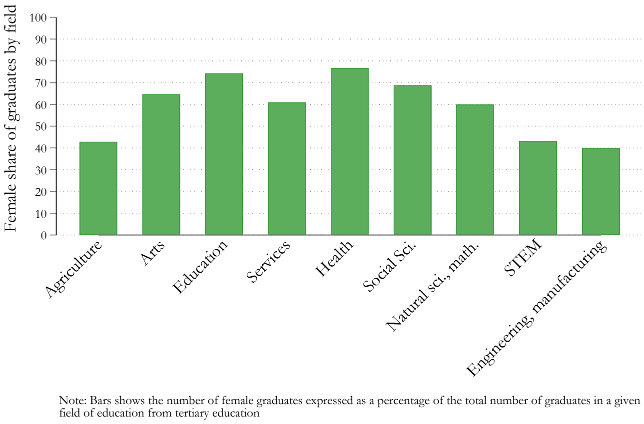
Figure A.1: Female share of graduates in a given field of education: High income countries



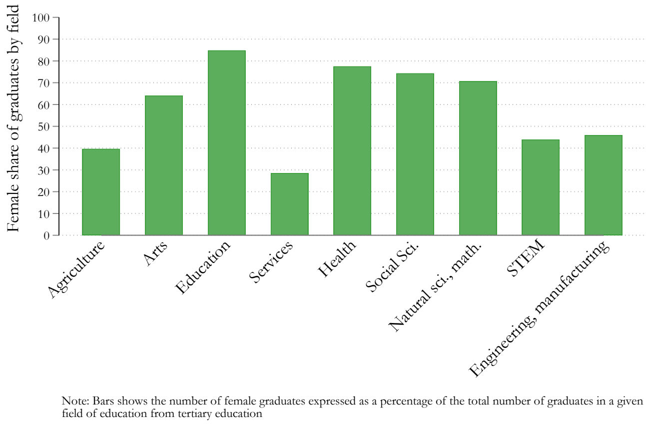
(a) Argentina



(b) Chile



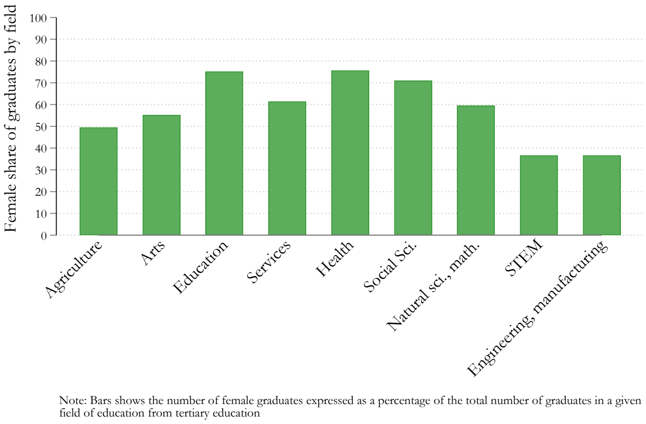
(c) Panama



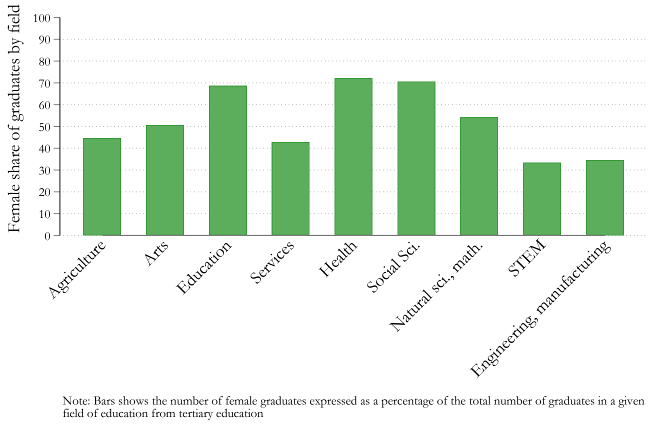
(d) Uruguay

Source: World Bank. Argentina (2011), Chile (2017), Panama (2016) and Uruguay (2017).

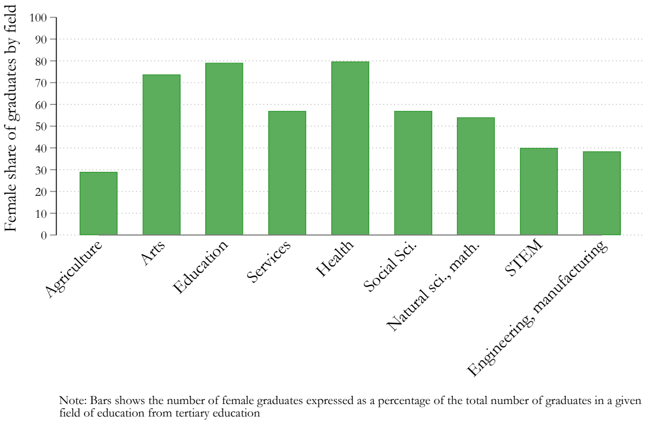
Figure A.2: Female share of graduates in a given field of education: Upper middle income countries



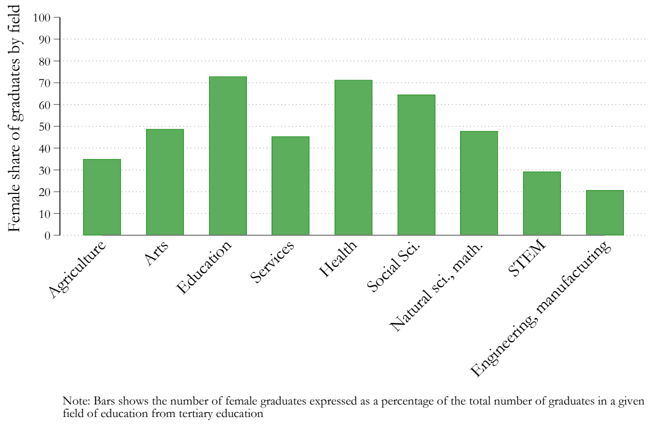
(a) Brazil



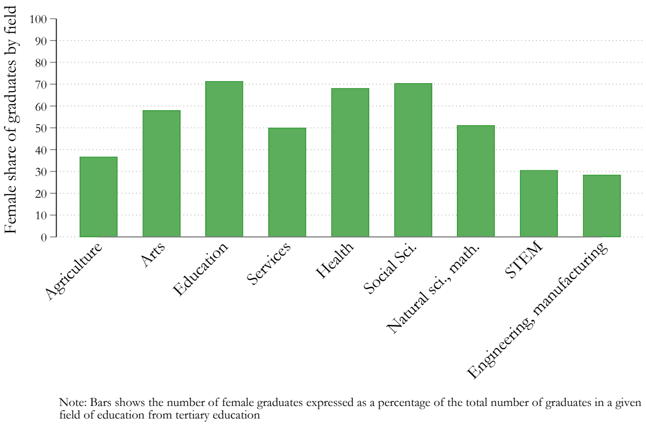
(b) Colombia



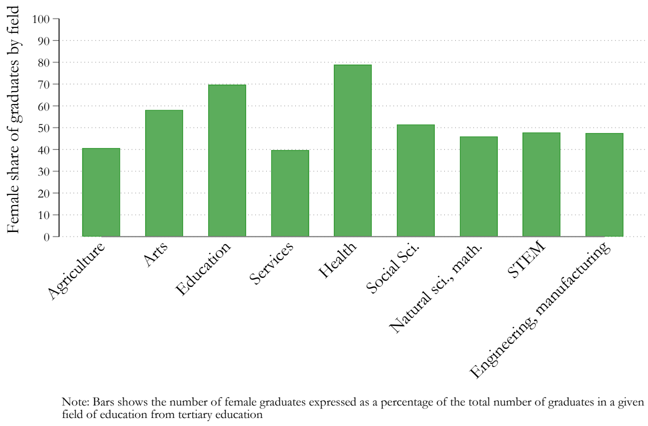
(c) Dominican Rep.



(d) Ecuador



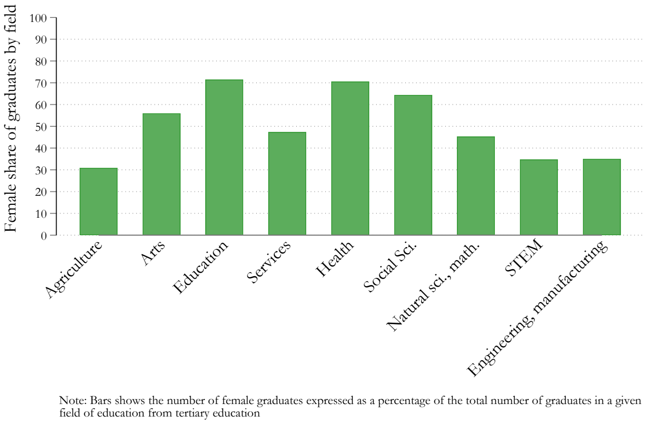
(e) Mexico



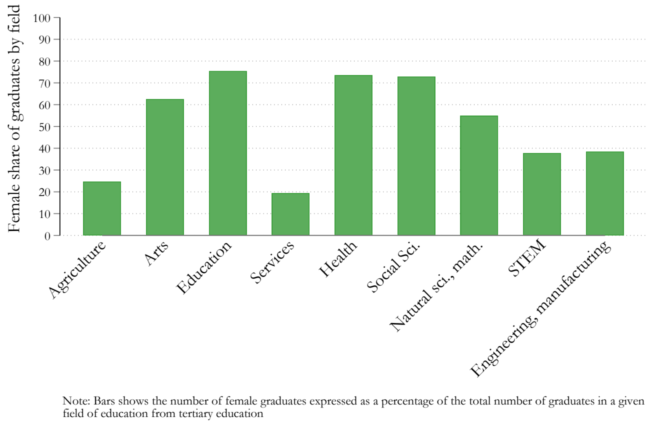
(f) Peru

Source: World Bank. Brazil (2017), Colombia (2018), Dominican Republic (2017), Ecuador (2016), Mexico (2017) and Peru (2017).

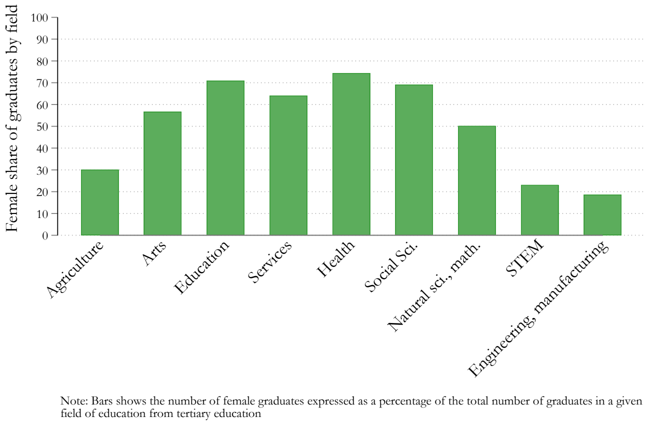
Figure A.3: Female share of graduates in a given field of education: Lower middle income countries



(a) Guatemala



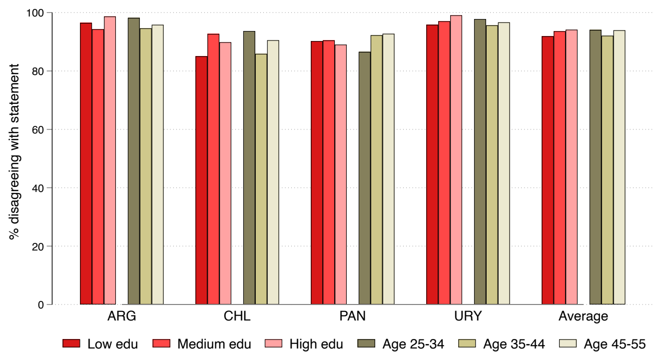
(b) Honduras



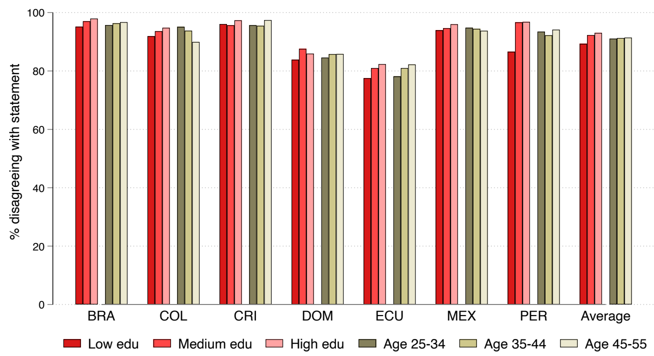
(c) El Salvador

Source: World Bank. El Salvador (2018), Guatemala (2015) and Honduras (2018).

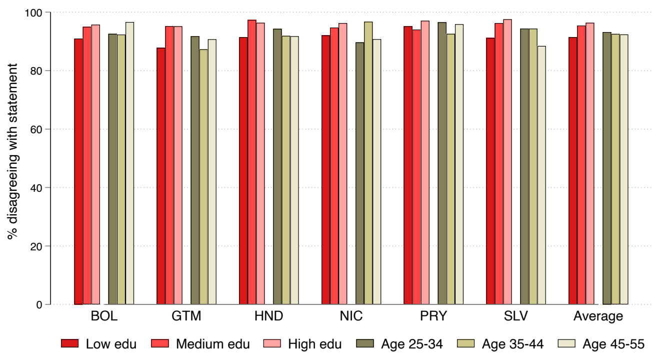
Figure A.4: Women have the same capacity for science and technology as men: % of individuals agreeing, by education and age



(a) High income



(b) Upper middle income

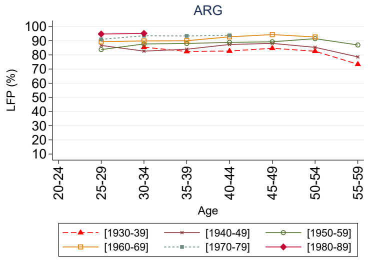


(c) Lower middle income

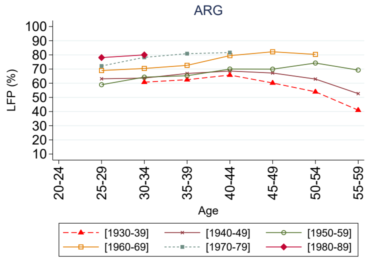
Note: Individuals aged 25-55 years old. This figure shows, by education level and cohort, the percentage of individuals who agree or strongly agree with the statement 'Women have the same capacity for science and technology as men.' 'Low edu' refers to individuals with up to a high school education completed, while 'high' indicates those who have completed tertiary education. The bars show unweighted means. *Source*: authors' own calculations based on Latinobarometro, 2018.

Evolution of female LFP across cohorts, by education

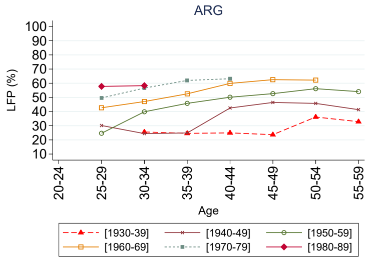
Figure A.5: Evolution of Female LFP Across Cohorts in High Income Countries, by Education



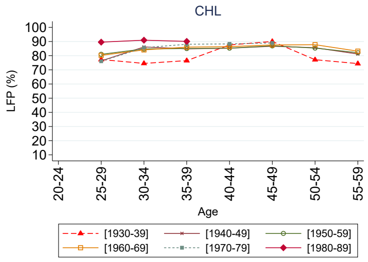
High



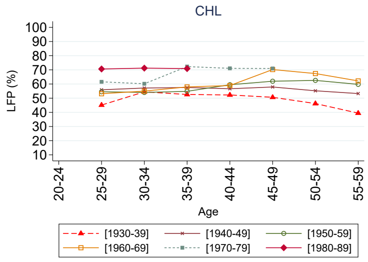
Middle



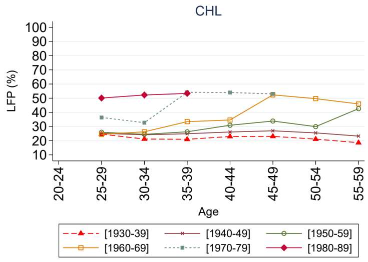
Low



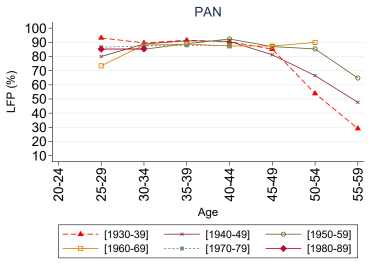
High



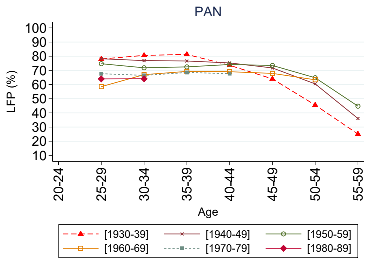
Middle



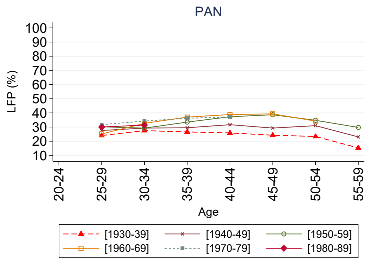
Low



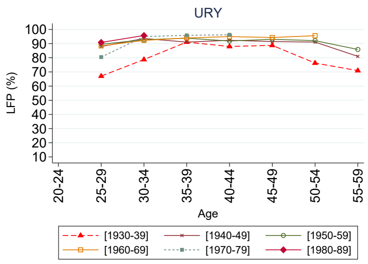
High



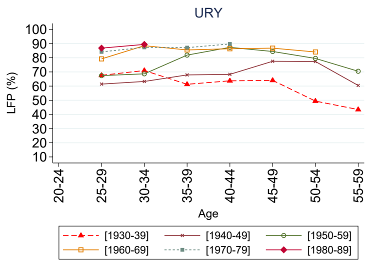
Middle



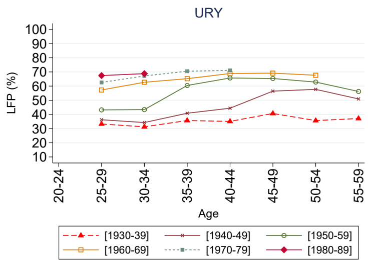
Low



High



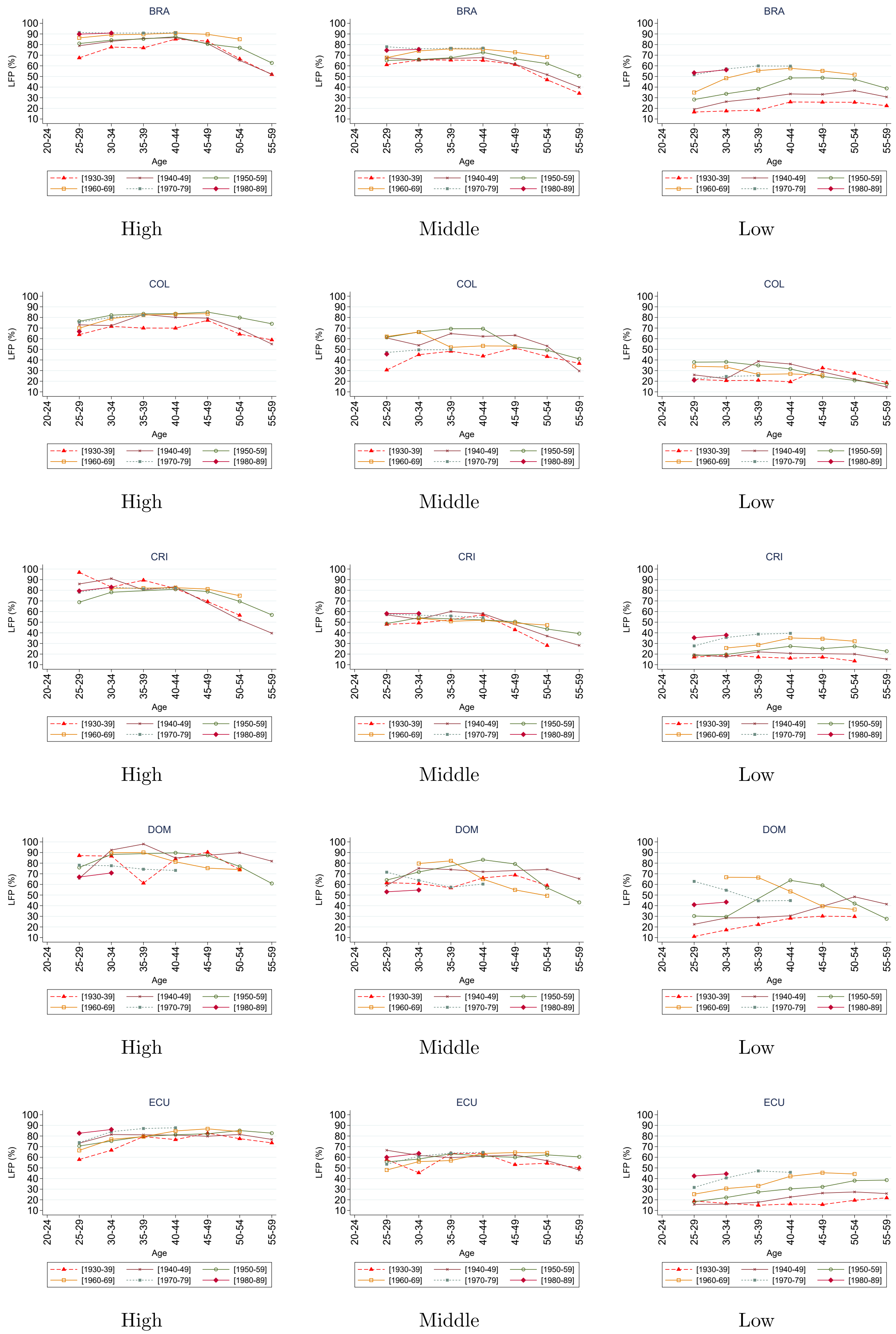
Middle

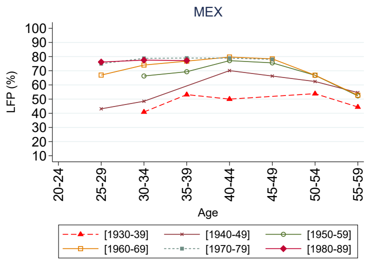


Low

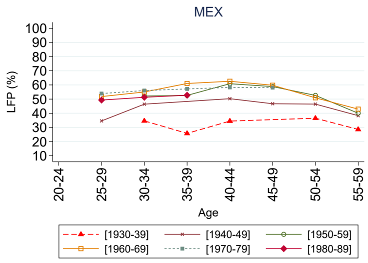
Note: These figures show the share of the population that is economically active, categorized by education level, over the life cycle and for six different cohorts: 1930-39, 1940-49, 1950-59, 1960-69, 1970-79, and 1980-89. Education levels are defined as follows: 'Low' refers to less than high-school education; 'medium' denotes high school graduates without higher education; and 'high' indicates completed tertiary education. *Source*: authors' own calculations based on IPUMS International's harmonized census microdata. We use censuses from the 1960s up to the 2010s. The years of the censuses differ by country (see Table B.4 in Appendix Section B.7).

Figure A.6: Evolution of Female LFP Across Cohorts in Upper Middle Income Countries, by Education

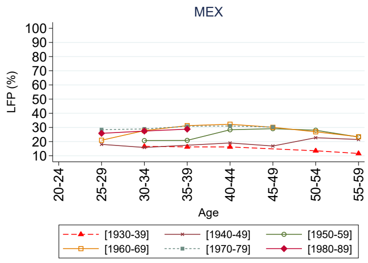




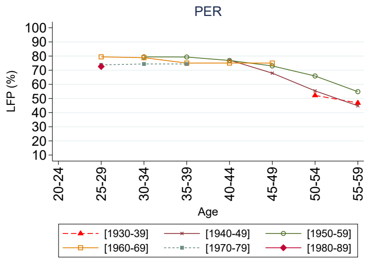
High



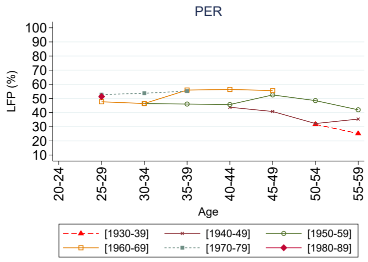
Middle



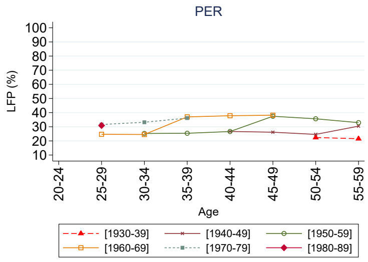
Low



High



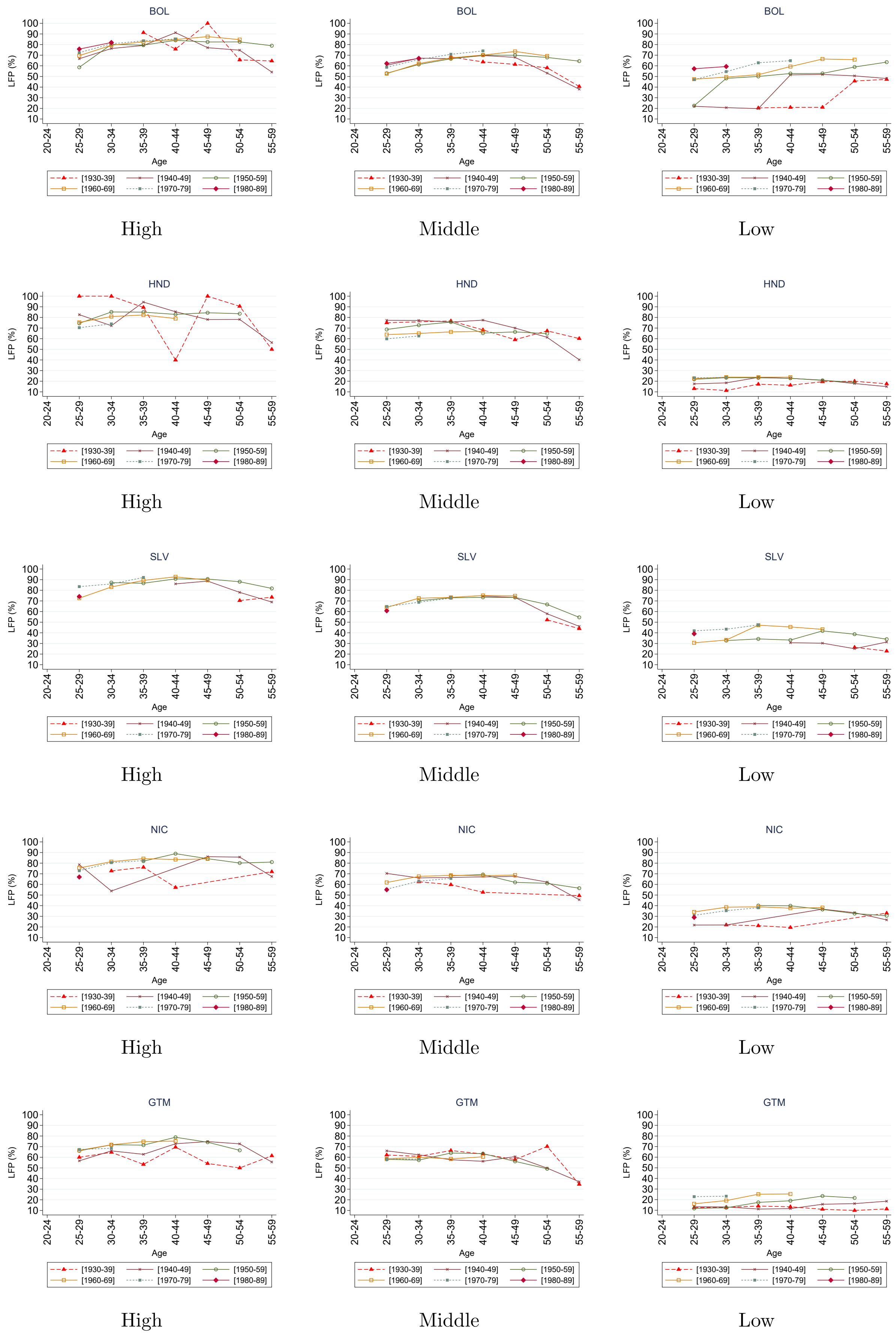
Middle

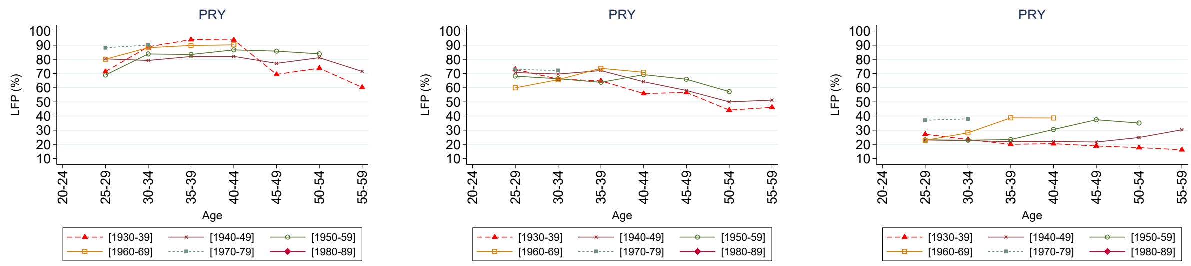


Low

Note: see note to Figure A.5.

Figure A.7: Evolution of Female LFP Across Cohorts in Lower Middle Income Countries, by Education

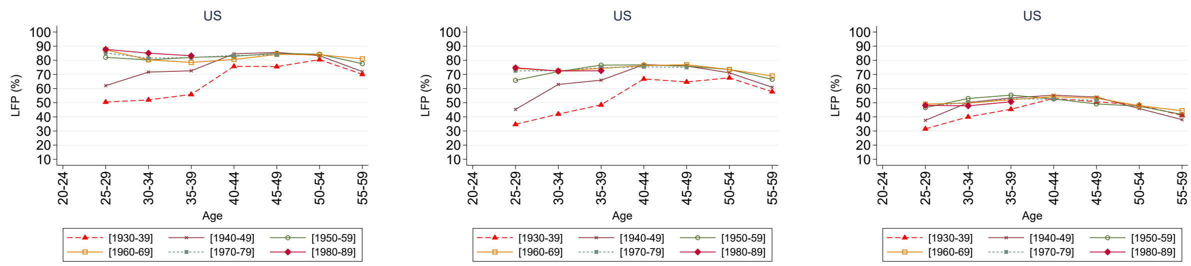




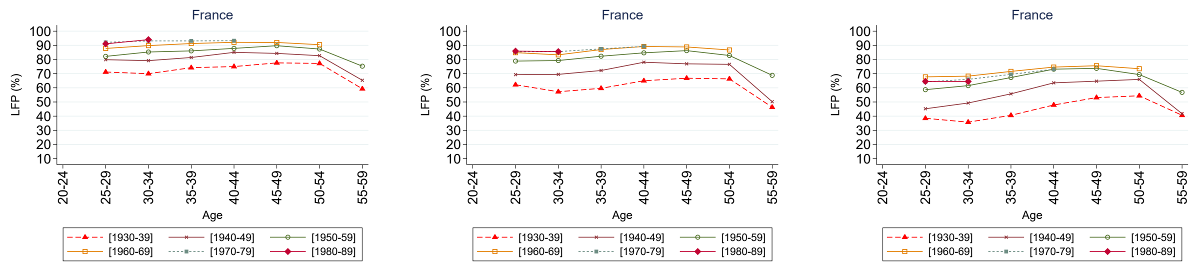
High Middle Low

Note: see note to Figure A.5.

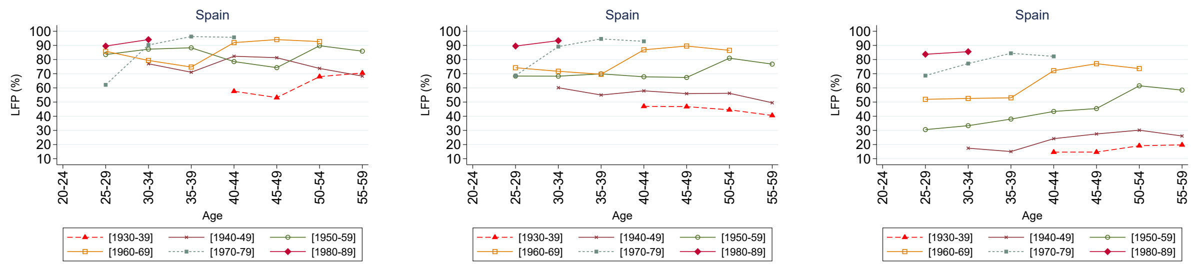
Figure A.8: Evolution of Female LFP Across Cohorts in US, France, Spain and Indonesia, by Education



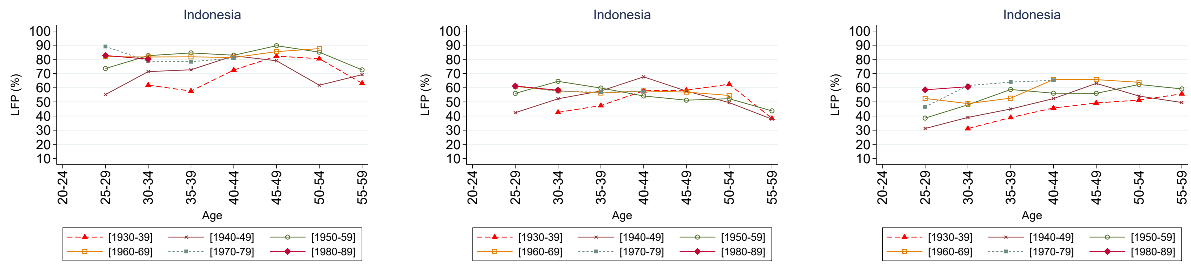
High Middle Low



High Middle Low



High Middle Low



High Middle Low

Note: see note to Figure A.5.

B Appendix: Data Sources

B.1 Definitions of countries income groups and education categories

B.1.1 Countries income groups

Countries were classified into different income groups based on their GNI per capita (in US$) for the period 2010-2020 and the corresponding World Bank Analytical Classifications. Each country was assigned to one of the following three groups:

- Lower-middle income (LMI): Countries that were considered LMI at least once in 2010-2020
- Upper-middle income (UMI): Countries that were considered UMI during the entire 2010-2020 period
- High income (HI): Countries that were considered HI at least once in 2010-2020

B.1.2 Education categories

- Low: less than high-school education.
- Medium: high school graduates without higher education.
- High: higher education completed.

B.2 GenLAC–CEDLAS household surveys data

GenLAC is the CEDLAS (Center for Distributive, Labor and Social Studies) initiative to promote gender equity through the generation, analysis, and dissemination of evidence for Latin America and the Caribbean. For more information about GenLAC, visit www.genlac.econo.unlp.edu.ar.

In this chapter we use their processed microdata, from more than 300 household surveys conducted in Latin American countries, to compute statistics. Table B.1 lists the surveys used in this chapter for 17 Latin American countries. Surveys are nationally representative (with the exception of Uruguay before to 2006 and Argentina, where surveys include mainly the urban population, which accounts for around 85 percent of the total population of both countries).

GenLAC-CEDLAS made every effort to make statistics comparable across countries and over time by utilizing similar variable definitions in each country/year. The indicators are constructed according to SEDLAC's processing protocol (CEDLAS and The World Bank). For the specific details about variables' construction and definitions, refer to GenLAC methodological documents.

Table B.1: Household surveys included in the analysis.

Country	Survey
Argentina	Encuesta Permanente de Hogares Continua (yearly, from 2003 to 2019)
Bolivia	Encuesta de Hogares (yearly, from 2001 to 2019)
Brazil	Pesquisa Nacional por Amostra de Domicilios - Continua (yearly, from 2001 to 2019)
Chile	Encuesta de Caracterización Socioeconómica Nacional (2000 & biyearly in 2003–2017)
Colombia	Gran Encuesta Integrada de Hogares (yearly, from 2001 to 2019)
Costa Rica	Encuesta Nacional de Hogares (yearly, from 2000 to 2019)
Dom. Republic	Encuesta Continua Nacional de la Fuerza de Trabajo (yearly, from 2000 to 2019)
Ecuador	Encuesta de Empleo, Desempleo y Subempleo (yearly, from 2003 to 2019)
Guatemala	Encuesta Nacional de Condiciones de Vida (2004, 2006, 2011 & 2014)
Honduras	Encuesta Permanente de Hogares de Propósitos Múltiples (yearly, from 2001 to 2019)
Mexico	Encuesta Nacional de Ingresos y Gastos de los hogares (biyearly from 2000 to 2018
Nicaragua	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida (2001, 2005, 2009, 2014)
Panama	Encuesta de Hogares (yearly, from 2000 to 2019)
Peru	Encuesta Nacional de Hogares (yearly, from 2000 to 2019)
Paraguay	Encuesta Permanente de Hogares (yearly, from 2001 to 2019)
El Salvador	Encuesta de Hogares de Propósitos Múltiples (yearly, from 2000 to 2019)
Uruguay	Encuesta Continua de Hogares (yearly, from 2000 to 2019)

Note: All samples are restricted to individuals aged 25-55. *Source*: GenLAC - Evidence for gender equity in Latin America and the Caribbean (CEDLAS, 2022).

Table B.2: Definitions of labor market variables.

Variable	Definition
Labor force participation	Economically active population as a percentage of the population aged 25-55. A person is considered economically active if she is either employed or unemployed.
Hours worked	Weekly hours worked in a paid job for workers aged 25-55, including all jobs.
Hourly wage	Average hourly wage in main occupation (in 2005 PPP USD), for workers aged 25-55 with positive earnings and positive hours worked.
Informality	Workers in informal jobs as a percentage of the employed population aged 25-55. Informal workers include wage workers without access to social security, self-employed workers who have not completed higher education, and zero-income workers.
Employer	Employers as a percentage of the employed population aged 25-55.
Wage employee	Wage employees as a percentage of the employed population aged 25-55.
Self-employment	Self-employed workers as a percentage of the employed population aged 25-55.
Unpaid workers	Unpaid workers (mainly family workers or apprentices) as a percentage of the employed population aged 25-55.

Definitions of labor market variables (continued).

Variable	Definition
Large-firm workers	Workers employed in large firms (with 5 or more employees) as a percentage of the employed population aged 25-55.
Occupation	Occupation held in a worker's main job, based on the 2-digit International Standard Classification of Occupations of 2008 (ISCO-08). Not all surveys in the region allow for this classification.
Sector	Sector of activity of a worker's main job, based on the 1-digit International Standard Industrial Classification (ISIC-Revision 3).

Note: For more details about variables' construction and definitions refer to GenLAC methodological documents.

Definitions of education completion rates

- Pre-primary enrollment rate (5 years old): Percentage of five-year-old children enrolled in an educational institution.
- Primary completion rate (20-30 years old): Individuals who completed at least primary education as a percentage of individuals aged 20-30.
- Secondary completion rate (20-30 years old): Individuals who completed at least secondary education as a percentage of individuals aged 20-30.
- Tertiary completion rate (30-40 years old): Individuals who completed at tertiary education as a percentage of individuals aged 30-40.

Definition of location

It is a variable that captures the geographical macro-regions in which a country is organized. These macro-regions do not usually have a main authority, but instead result from the aggregation of other geographical areas with their own government. For example, each of the macro-regions of Argentina (Greater Buenos Aires, Pampeana, Patagonia, Cuyo, Northwest and Northeast) result from the aggregation of various provinces and each of the macro-regions of Brazil (North, Northeast, Southeast, South, Central -West) result from the aggregation of various federation units. In the case of Peru, the macro-regions (Urban Coast, Urban Sierra, Urban Jungle, Rural Coast, Rural Sierra, Rural Jungle and Metropolitan Lima) result from the combination of regions (Coast, Sierra, Jungle, Lima) and areas (urban and rural).

B.3 PISA Evaluations

PISA is the OECD's Program for International Student Assessment. It evaluates students' knowledge and skills as they approach the end of their compulsory schooling (at 15 years of age). Since their initial administration in 2000, the PISA examinations have been conducted every three years in a number of countries. The tests evaluate students' abilities in reading, math, and science (and in certain countries, additional topics). In Latin America, the countries that participated in the last edition of PISA (2018) are Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Mexico, Panama, Peru, and Uruguay. For more details on this survey see OECD (2018).

In this chapter, we use PISA data from the years 2009, 2012, and 2018. We analyze tests scores in math and reading, math self-concept, and expectations to work in a STEM occupation at age 30.

Tests scores: The standard deviation of the test score distribution is 100 points. Therefore, a 10-point difference on the PISA scale indicates an effect size of 0.10 SD.

Math self-concept index: Index constructed based on each student's responses to five questions about how strongly they agree with a given statement related to their math competence. The five statements considered are: 'I am good at mathematics'; 'I get good grades in mathematics'; 'I learn mathematics quickly'; 'I have always believed that mathematics is one of my best subjects'; and 'In my mathematics class, I understand even the most difficult work'. The possible answers to these questions are: "very confident", "confident", "little confident", and "not confident at all". We code the response of "not confident at all" as zero, "little confident" as one, "confident" as two, and "very confident" as three. We use their responses to construct a math self-perception index by summing over the scores of an individual's responses and dividing that sum by 3x5=15. This results in an index with a minimum value of zero and a maximum value of one. Available in 2012 only.

Expectation to work in a STEM occupation at age 30: Indicator equal to one if a student expects to work in a STEM-related occupation at the age of 30. STEM-related occupations include science and engineering professionals, and information and communications technology professionals. Available in 2018 and in 2015 only for some countries.

B.4 SERCE and TERCE Evaluations

These regional exams for primary education are produced by UNESCO. This chapter makes use of the Second Regional Comparative and Explanatory Study (SERCE; 2006) and the Third Regional Comparative and Explanatory Study (TERCE; 2013). These assessments evaluate the learning achievements of third- and sixth-grade students in reading, math, and science. With the exception of Bolivia, Cuba, Honduras, and Venezuela, nearly every nation in Latin America took part in the TERCE testing. The test score scale has a standard deviation of 100 points.

Table B.3: Countries and years included in the SERCE/TERCE analysis

Country	Years
Argentina	2006, 2013
Brazil	2006, 2013
Chile	2006, 2013
Colombia	2006, 2013
Costa Rica	2006, 2013
Dominican Republic	2006, 2013
Ecuador	2006, 2013
El Salvador	2006
Guatemala	2006, 2013
Honduras	2013
Mexico	2006, 2013
Nicaragua	2006, 2013
Panama	2006, 2013
Paraguay	2006, 2013
Peru	2006, 2013
Uruguay	2006, 2013

B.5 Adult's Skills (ECAF 2015)

The ECAF 2015 was carried out by CAF-development bank of Latin America, and has information about adult's skills in 10 major cities in 10 LAC countries. In this chapter we analyze the data for 9 countries (all except Venezuela).

Raven Progressive Matrices Test (Raven PMT; Raven, 1936): It is a nonverbal assessment of fluid intelligence that gauges abstract reasoning using 60 items. The person is asked to find the missing component that completes a certain pattern in each of the 60 items by comparing various forms and using analogies. A brief test with 8 items is utilized in the 2015 CAF Survey.

Test of Verbal Conceptualization: This test measures the capacity for inductively producing linguistic concepts. The task entails inferring the relationship or rule that unites two concepts—in this case, "table-chair"—based on the presentation of the stimuli and verbally expressing it (answer: "They are both furniture"). It also requires putting into practice the three fundamental steps of inductive reasoning: codification, inference, and mapping. The exam consists of a sample of questions from the Wechsler Adult Intelligence Scale III's subtest "Analogies" (WAIS III). The first and last items, which are deemed to be easy, the first two items of medium difficulty, and the first two items of maximum difficulty were used to choose the items.

Index of numerical skills: This index is created by summing the results of a test and three questions requiring basic mathematical computations. The exam asks the respondent to count backward from 20 to 0; if they do it properly in the allotted time, they receive 1 point; if not, they receive no points. The respondent is asked to answer real-world mathematics issues. They receive 1 point for each accurate response. There is no credit for wrong responses. The numeral skills index ranges from 0 to 4, with each question taking the value 1 if the respondent answers correctly and 0 otherwise.

All these variables are standardized (expressed in standard deviations with respect to the measure). The standardization was done taking into account the whole sample (ages 15 to 55 and 10 cities). The statistics shown in this chapter were computed for people aged 25 to 55 years old.
For more details on this survey and the indicators used here, please see Chapter 1's Appendix in Berniell et al. (2017).

B.6 UNESCO Institute for Statistics (UIS) data

To compute the OECD indicator shown in Figure 3 we use the UIS, UNESCO data, SDG Indicator 4.1.2: Percentage of a cohort of children or young people aged 3-5 years above the intended age for the last grade of each level of education who have completed that grade (i.e. 14-16 years old is the reference age group for calculation of the primary completion rate in the OECD).

B.7 IPUMS

B.7.1 American Community Survey (ACS)

The American Community Survey is a project of the United States Census Bureau that has supplanted the decennial census as the primary source of information about the US population. We utilize the ACS data extracted from IPUMS for the years 2000-2019.

B.7.2 IPUMS International

In the cohort analysis, we rely on IPUMS International's harmonized census microdata from Latin American countries, France, Indonesia, Spain and the United States. To facilitate comparative research, IPUMS codes the data consistently across countries and over time.
LFP rates in the IPUMS data are not necessarily fully comparable to the CEDLAS (household survey) data for all LAC countries. For example, there is likely to be some variation in the treatment of unpaid work. However, IPUMS invests significant effort into standardizing measures across years and countries so these data are suitable for cross-country and cross-cohort comparisons.
There is some variation in the years for which census data are available across LAC countries; for example, while in Chile census data are available for every decade from 2017 to 1960, in Peru there are only data for 2007 and 1993. In particular, Peru is excluded from the cohort analysis in this chapter because IPUMS has data for only two Peruvian censuses, and because there were relevant changes in the definitions of key labor market outcomes between those two censuses. In Bolivia and El Salvador, there were also some changes in the definition of labor market variables across censuses. However, IPUMS argues that the categories are generally comparable over time, so we keep those two countries in our cohort analysis.
Table B.4 lists the censuses analyzed in this chapter. For more details about this data, refer to international.ipums.org

Table B.4: Census data (Source: IPUMS International)

	2010s	2000s	1990s	1980s	1970s	1960s
Argentina	2010	2001	1991	1980	1970	
Bolivia	2012	2001	1992		1976	
Brazil	2010	2000	1991	1980	1970	1960
Chile	2017	2002	1992	1982	1970	1960
Colombia		2005	1993	1985	1973	1964
Costa Rica	2011	2000		1984	1973	1963
Dominican Republic	2010	2002		1981	1970	1960
Ecuador	2010	2001	1990	1982	1974	1962
El Salvador		2007	1992			
Guatemala		2002	1994	1981	1973	1964
Honduras		2001		1988	1974	1961
Mexico	2015 & 2010	2005 & 2000	1995 & 1990		1970	1960
Nicaragua		2005	1995		1971	
Panama	2010	2000	1990	1980	1970	1960
Paraguay		2002	1992	1982	1972	1962
Peru		2007	1993			

B.8 Time Use Surveys

Table B.5 provides the list of the time-use surveys used in this chapter, employed to compute market and non-market hours. Non-market hours include care activities and household chores. Household chores are grouped into seven categories, following the guidelines established by the CAUTAL (CEPAL): preparing and serving food, cleaning the house, cleaning and maintenance of clothes and shoes, maintenance and minor reparations in the house, house administration, shopping for the household (including commuting time), caring for plants and pets. In all cases, the commuting and waiting time is included. Indicators related to the use of time are computed for married individuals aged 25-45. For more details about variables' construction and limitations of the time use data, refer to GenLAC methodological documents.

Table B.5: Time use surveys included in the analysis

Country	Survey	Year
Argentina	Encuesta sobre Trabajo No Remunerado y Uso del Tiempo	2013
Chile	Encuesta Nacional sobre Uso del Tiempo (ENUT)	2015
Colombia	Encuesta Nacional de Uso del Tiempo (ENUT)	2016
Costa Rica	Encuesta Nacional de Uso del Tiempo (ENUT)	2017
Ecuador	Encuesta Especifica de Uso del Tiempo	2012
El Salvador	Encuesta Nacional de Uso del Tiempo (ENUT)	2017
Guatemala	Modulo de Uso del Tiempo de la ENCOVI	2014
Mexico	Encuesta Nacional sobre Uso del Tiempo	2014
Paraguay	Encuesta sobre Actividades Remuneradas y No Remuneradas (EUT)	2016
Peru	Encuesta Nacional de Uso del Tiempo (ENUT)	2010
Uruguay	Encuesta de Uso del Tiempo y del Trabajo no Remunerado (EUT)	2013

Note: All samples are restricted to individuals aged 25-45. For more details about variables' construction and definitions refer to GenLAC methodological documents.