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DOCUMENTOS DE TRABAJO

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Documento de Trabajo Nro. 379
Agosto, 2026
ISSN 1853-0168
www.cedlas.econo.unlp.edu.ar

Cita sugerida: Berniell, I. y R. Fernández (2026). Female Labor Force Participation and Fertility in Latin America: Decomposing Two Decades of Change. Documentos de Trabajo del CEDLAS Nº 379, Agosto, 2026, CEDLAS-Universidad Nacional de La Plata.

Female Labor Force Participation and Fertility in Latin America: Decomposing Two Decades of Change*

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Abstract

Female labor force participation (LFP) and fertility have evolved jointly across Latin America, with participation rising as fertility declined over the last two decades. This paper studies the extent to which changes in fertility can account for increases in women's labor supply in the five largest economies in the region as well as in the US. Defining three groups based solely on the presence of children under age 6, under age 13, and no children under age 13, we find that in all countries changes in labor supply within groups overwhelmingly dominate the compositional shifts induced by declining fertility. When we further disaggregate women into groups by their education in addition to the age of their children, the changing composition of the population becomes more important and the increase in LFP is mostly driven by more educated women without children under age 13, reflecting increases in both their participation and population share.

JEL Classification: J13, J16, J21
Keywords: female labor force participation, fertility, Latin America.

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*We thank Milagros Onofri for her excellent research assistance.

1 Introduction

Over the past two decades, Latin America has experienced a remarkable increase in women's labor force participation. Between 2000—2023, labor force participation (LFP) among women aged 25–54 increased substantially across the region as shown in Figure 1a. Gains were especially pronounced in high- and upper-middle-income countries, where the gender gap in participation narrowed by roughly 10 percentage points (Berniell, Fernández, Krutikova, 2025). This rise in LFP ranks among the most important socioeconomic changes in the region during this period, with direct implications for household welfare, economic growth, and gender equality.

During this same period, Latin America underwent a fertility transition (see Figure 1b). The total fertility rate (TFR) declined from about 2.5 children per woman around 2000 to below 2.0 by the early 2020s, with several countries falling below the replacement level of 2.1 (Berniell, Fernández, Menduiña, and Onofri, 2026, hereafter BFMO).[1] This decline was accompanied by significant changes in the timing and composition of births: women postponed first births, reduced higher-order fertility, and increasingly accumulated education before becoming mothers. In parallel, the educational composition of the female population shifted dramatically. The share of women with less than primary education fell sharply—by more than 35 percentage points in high-fertility countries—while completion rates of secondary and tertiary education rose markedly (Fernández, Pagés, Székely, Acevedo, 2025; Berniell, Fernández, Krutikova, 2025).

These concurrent trends in female labor force participation and fertility, together with a growing literature documenting how women's participation in labor markets is impacted by motherhood in Latin America—namely, a long-lasting decline in women's employment after the birth of their first child, on the order of 30 percent on average in the region (Berniell et al., 2021; Marchionni and Pedrazzi, 2025)—motivate our paper. In particular, we ask how much of the observed increase in female labor force participation reflects changes in fertility behavior, as opposed to demographic changes and a broader strengthening of women's attachment to the labor market.

We address this question by decomposing the change in aggregate female labor force participation between 2002–2004 and 2022–2024 for the five largest Latin American economies—Argentina, Brazil, Chile, Colombia, and Mexico, representing approximately 70% of Latin America's population—and include the United States as a useful comparison. We partition the overall change into three components: a *rate effect*, i.e., changes in group-specific participation holding population composition fixed, a composition effect, ie., changes in the demographic structure holding group-specific rates fixed, and lastly an interaction effect of the two changes. We implement this decomposition into mutually exclusive groups primarily along two dimensions: the ages of children in the household (children of ages 0–5, children of ages 6–12, or no child under age 13) – which we denote

[1] TFR is defined as the average number of children a woman would be expected to have if at each age she would give birth according to the current age-specific fertility rates.

by "child groups" – and the interaction of these child groups with education – which we denote by "child-education groups." We further examine how these patterns vary across age by intersecting these dimensions with age. This framework quantifies the contributions of fertility decline (fewer women living with children under age 13), higher education levels, and within-group changes in women's labor supply, while allowing for heterogeneity over the life cycle among women of ages 25–54.

Our paper contributes to a large literature studying the interaction between fertility and women's labor market outcomes. Credible identification strategies consistently show that childbearing induces sizable and persistent reductions in women's employment and earnings, though magnitudes vary across contexts and life-cycle stages (see Clarke, 2018 and Bhalotra et al., 2023 for good reviews of this literature). Recent work documents a striking shift that has emerged in developed countries: while fertility and female labor force participation were negatively correlated through the 1980s, this relationship became weakly positive by the 2000s (Doepke et al., 2023) or zero (Kearney and Levine, 2025). Doepke et al. (2023) characterize this reversal as a "new era" in the economics of fertility, in which factors facilitating the compatibility of women's career and family goals—including family policy, cooperative fathers, favorable social norms, and flexible labor markets—have become key drivers of fertility decisions. By contrast, this negative relationship persists in Latin America (BFMO, 2026). Recent surveys covering OECD countries (Turon, 2023) and developing economies (Bhalotra et al., 2023) emphasize that the weakening of the traditional negative association between fertility and female employment in developed countries reflects changes in educational attainment, but also in labor market opportunities and in policies facilitating work-family reconciliation, changes that have been slower to materialize in Latin America.

We find that the increase in female labor force participation (LFP) over the past two decades is driven overwhelmingly by changes in women's labor supply within child groups rather than by compositional shifts induced by fertility decline, i.e., the changing shares of women across the three child groups. Decomposing the change in aggregate LFP between circa 2002–04 and circa 2022–24 using the three child groups defined previously reveals that rate effects dominate composition effects in all five Latin American countries we study, accounting for the vast majority of participation gains (above 90%). Although the fertility decline substantially reduced the share of women living with young children—-especially those with children under age five—-this compositional change explains only a limited fraction of aggregate LFP growth, even in those countries experiencing the largest fertility declines. Instead, the main driver of rising participation is a broad-based increase in labor market attachment within groups, and especially among women without children under age 13, reflecting both their high baseline participation rates and the sizable increases in their participation over time.

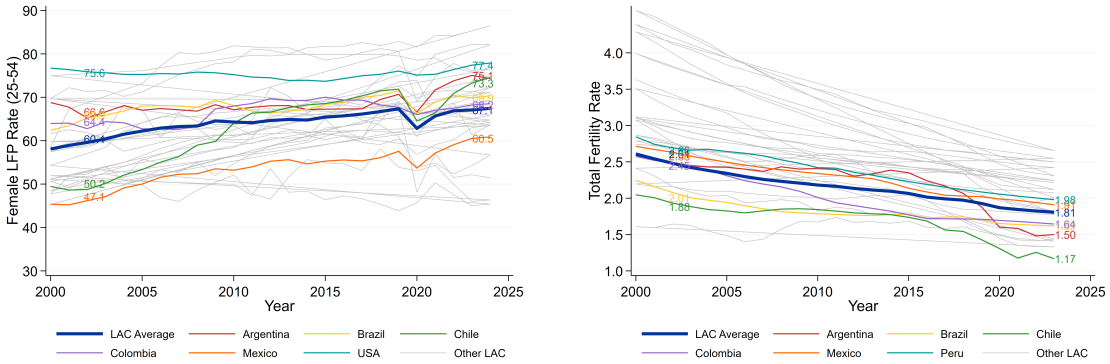
When we consider instead child-education groups (i.e., subdividing each child group into two groups according to whether the woman has a high-school education), our conclusion is more nuanced. Now composition plays a more important role everywhere ac-

counting from 27.5% (USA) to 151% (Brazil) of the total change in LFP, though the rate effect still accounts for two-thirds or more in the US, Argentina, Chile, and Mexico. A common pattern across all countries, however, is that the largest contributions to the rise in female labor force participation come from more educated women without children under age 13. Further decompositions by age and education show that their dominant contribution is not confined to younger (e.g. more educated) cohorts delaying childbearing. Rather, participation gains among more educated women without young children are pervasive across the age distribution within this group. Interestingly, Brazil and Colombia show a different pattern. Not only is the increase in female LFP substantially lower, but it actually fell for the majority of child-education groups in both countries. Those groups that did increase their participation, moreover, only did so slightly, so that the overall rate effect is actually negative. In these two countries it is the increase in education that brought about the higher female LFP.

The remainder of the paper is organized as follows: Section 2 describes the data and Section 3 provides some descriptive statistics. Section 4 presents the decomposition framework and the main results. Section 5 concludes.

Figure 1: Total Fertility Rate and Female LFP in LAC 2000-2023

(a) Female LFP (Ages 25-54) (b) Total Fertility Rate



Notes: The left-hand figure shows the evolution of the female labor force participation rate for women of ages 25–54 from 2000 to 2023 for Latin America & Caribbean as well as the US. The right-hand displays the total fertility rates over the same period. Colored lines highlight the six countries analyzed in this paper: Argentina, Brazil, Chile, Colombia, Mexico, and the United States. Gray lines represent the following 16 LAC countries: Belize, Bolivia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. The thick dark blue line represents the regional average. Data points are labeled with their corresponding values at 2003 and 2023. *Source*: ILOSTAT (LFP) and Our World in Data (TFR).

2 Data

We use harmonized household surveys microdata from GenLAC.[2] Household surveys allow us to combine fertility information with detailed labor market and educational data at the individual level, essential for our analysis.[3] We study five Latin American countries: Argentina, Brazil, Chile, Colombia, and Mexico. These countries represent the region's largest economies and approximately 70% of Latin America's population. We also include the United States as a comparator country, using microdata from the American Community Survey (ACS) processed by IPUMS. Appendix Table 1 lists the main survey instruments for each country. With the exception of Argentina, all surveys are nationally representative.[4] For detailed construction rules and variable definitions for the Latin American countries, see the GenLAC methodological documentation.[5]

Our empirical design decomposes the change in female LFP between an initial period ($t = 0$) and a recent period ($t = 1$). We define $t = 0$ using pooled data from 2002–2004 and $t = 1$ using pooled data from 2022–2024.[6] Pooling adjacent survey waves reduces sampling variability and mitigates concerns about idiosyncratic year-to-year fluctuations. When a country lacks one or more of these years, we use the closest available survey years to construct the corresponding period (see Appendix Table 1).

2.1 Sample and Classification of Women by Children's ages

We restrict the sample to women of ages 25–54 who are household heads or spouses/partners of the household head. Latin American household surveys generally identify co-resident children and their relationship to the household head, but do not consistently identify biological links between each adult and each child. Restricting attention to female heads and spouses of household heads—consistent with standard practice when using household surveys/censuses to measure fertility and accurately determine the ages of co-residing children (see, e.g., Cruces and Galiani, 2007)—allows us to accurately identify women who live with their own children or stepchildren at the cost of excluding from the analysis younger mothers who typically appear in the survey as daughters living in their parents'

[2] GenLAC is a CEDLAS (Center for Distributive, Labor and Social Studies) initiative that produces comparable gender-related indicators for Latin America using nationally representative household surveys following SEDLAC's harmonization protocol, applying consistent definitions across country-years. See Socio-Economic Database for Latin America and the Caribbean (CEDLAS and The World Bank).

[3] Although population censuses could provide similar information, Mexico's most recent census is from 2020 and microdata from Brazil's latest census (2022) are not available at the time of this analysis, limiting the feasibility of using censuses for consistent cross-country comparisons. Demographic and Health Surveys would be another alternative, but they are not available for all countries in our sample nor for recent years.

[4] Argentina's surveys primarily cover the urban population, approximately 85% of the population.

[5] See https://genlac.econo.unlp.edu.ar/methodology/

[6] We use the closest available years when a country lacks data for specific years. In particular, Argentina's Permanent Household Survey underwent a methodological transformation to a continuous design in 2003; therefore, we use data for 2003-2005 instead of 2002-2004. Chile's CASEN survey is conducted every three years, so we use data from 2000 and 2003 instead of 2002-2004, and 2022.

household.[7] In particular, this choice implies that our results speak to prime-age women in household-head or spouse of household-head roles rather than to all women aged 25–54.

We divide our sample according to the age of the youngest (co-resident) child and construct two indicators: an indicator for whether the female head/spouse has at least one child of age 0–5 in the household and an indicator for whether the youngest child is of age 6–12. These indicators generate three mutually exclusive child groups: (i) women living with at least one child of age 0–5 which we denote "Pre-K" mothers; (ii) women living with at least one child of age 6–12 and no children of age 0–5, which we denote "School-age" mothers; and (iii) women living with no children under age 13—a residual category that includes both women whose children are 13 or older and women with no children. We denote this category as "None-under-13" women. We use age 12 as the cutoff for two reasons. First, household surveys identify motherhood most reliably when children are young: in Latin America, young children almost always co-reside with their mothers, so classifying women by the presence of children under 12 limits mis-classification arising from not co-residing. Second, the largest "motherhood penalties" concentrate in early and middle childhood. In particular, age 13 roughly coincides with the transition into lower secondary school, after which children typically require less continuous supervision.

Our main outcome is female labor force participation, defined as women who are economically active—either currently employed (including self-employment and informal work) or unemployed but actively seeking work.

3 Fertility and Female LFP: Descriptive Statistics

Figure 1 illustrates the trajectories of fertility and female labor force participation across LAC and our six countries between the years 2000 and 2023. These figures serve as motivation for our analysis and include all women, not only household heads and spouses of household heads. The left-hand panel reveals a pronounced decline in total fertility rates across all Latin American countries over these two decades, with the magnitude of decline varying substantially. In the sample of countries in our study, Chile, Argentina, and Colombia experienced the largest fertility declines, with total fertility rates falling by roughly 40% over the period (from about 2.0 to 1.2 in Chile, from 2.6 to 1.5 in Argentina, and from 2.6 to 1.6 in Colombia). Brazil and Mexico followed with reductions of around 30%, declining from 2.2 to 1.6 and from 2.7 to 1.9, respectively. Percentage wise, the decline in the United States is more modest (20%), but it corresponds to a fall from 2.0 to 1.6. To put these numbers in perspective, recall that 2.1 children per woman is required in order for the size of a population not to decrease.[8]

[7] Although the American Community Survey (ACS) for the United States permits identification of each woman's own children within the household, we apply the same sample restriction (household heads and spouses) to the U.S. data for consistency with the Latin American countries.

[8] It is worth noting that the total fertility rate (TFR) is a snapshot in a given year. If women postpone having children, this will show up as a decrease in the TFR over this transition but not in completed fertility. As shown in BFMO (2026), completed fertility in Latin America fell over this period as well.

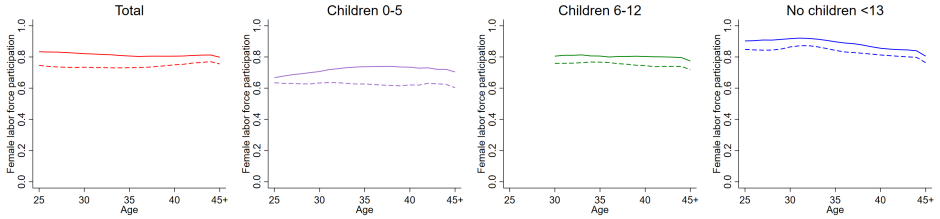
In stark contrast, the right-hand panel shows a general upward trend in female labor force participation (LFP) rates for women aged 25–54, though with considerable heterogeneity across countries. The most remarkable transformation occurred in Chile, where LFP increased from 49.5% in 2003 to 73.3% in 2023. Mexico also showed substantial growth, rising from 45.4% to 60.5% whereas Brazil and Argentina exhibited moderate but steady increases, with Brazil rising from 62.4% to 69.9% and Argentina from 68.8% to 75.1%. Colombia instead is a relative laggard: female LFP showed a modest increase from 64% to 68.2%. The United States maintained relatively stable and high participation rates throughout the period, edging up slightly from 76.7% to 77.4%. These divergent patterns—declining fertility alongside rising female labor force participation—motivate our decomposition analysis to understand the extent to which compositional changes contributed to LFP growth. The negative relationship between fertility and female LFP is particularly evident in countries like Chile and Mexico, where sharp fertility declines coincided with substantial increases in women's labor market engagement.

We now examine these patterns for our core sample: women of ages 25–54 who are household heads or spouses/partners of the household head, disaggregated by child group. Figure 2 displays female labor force participation rates by women's age and the child group they belong to for each of the six countries we study. The figure is organized with four figures per country showing female LFP rates of women of ages 25-54 for each of the following categories women: (i) all; (ii) Pre-K; (iii) School-Age; and (iv) None-under-13. The figure compares patterns in the early period (circa 2002–04, lighter dashed lines) with those in the recent period (circa 2022–24, darker solid lines). Several patterns emerge. First, across all countries and in both periods, Pre-K women exhibit substantially lower participation rates than women in other groups. Second, participation rates for School-Age women fall between those of Pre-K and None-under-13 women. Third, participation rates increased for every child group in every country (on average) between the early (circa 2002) and recent periods (circa 2022). Finally, the United States stands out with very high and stable participation rates over the life cycle. In contrast, Latin American countries have lower participation rates and exhibit a steeper increase in LFP over the life cycle.

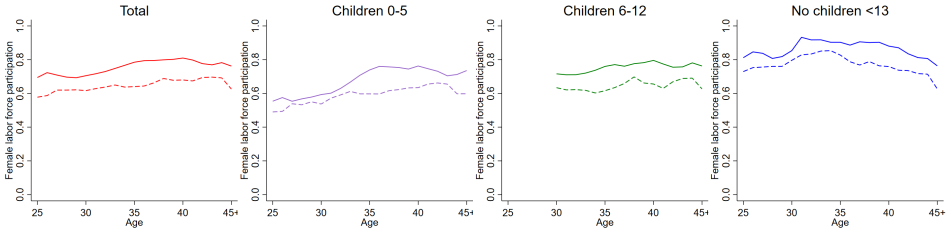
Table 1 reports the change in female LFP between our two periods by country and child group. More details are provided in Appendix Table A.3.

Figure 2: Female LFP by Age and Child Group

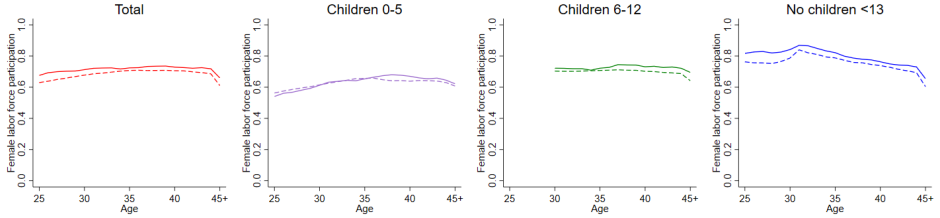
(a) United States



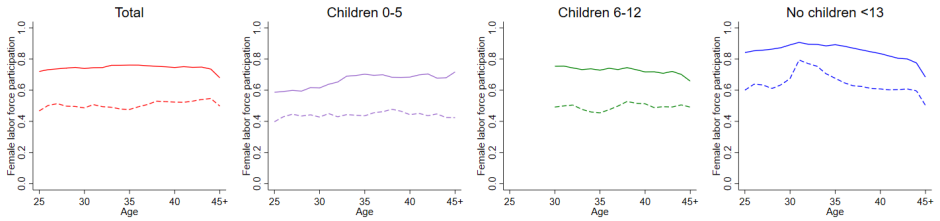
(b) Argentina



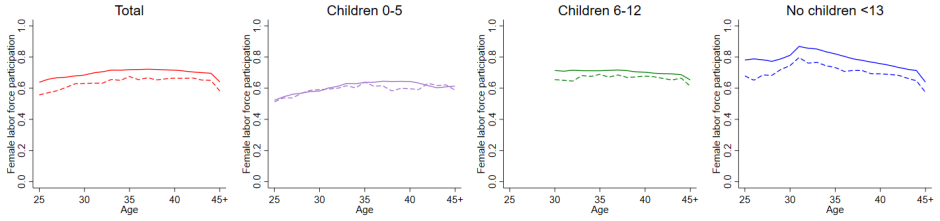
(c) Brazil



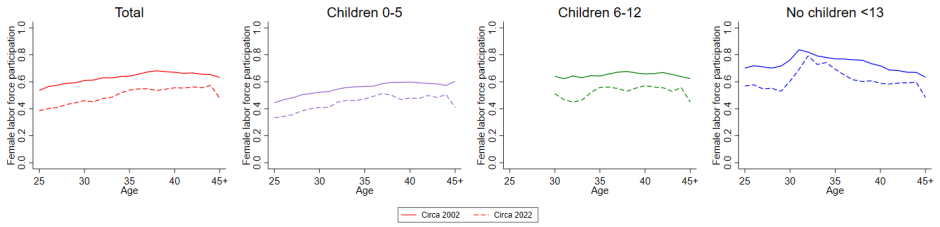
(d) Chile



(e) Colombia



(f) Mexico



Notes: Each panel shows labor force participation rates by age for women who are household heads or spouses of household heads. Rates are calculated using moving averages of three years (age ± 1) for ages 25–44, and a pooled average for ages 45–54. The value at age 45+ represents the average employment rate for women aged 45–54. Solid lines correspond to the most recent period, while dashed lines correspond to the earlier period. The exact survey years included in each period are country-specific (see Table 1). For women of age 25–29, we omit the series for the "children 6–12" group because very few women in this age range have children of age 6–12, making the estimates imprecise. Estimates are weighted using survey sampling weights. *Source:* Authors' calculations based on GenLAC and IPUMS.

Table 1: Female Labor Force Participation by Country, Child Group, and Period

Country	Survey	Periods	Group	LFP 1	LFP 2	Diff. (pp)
Argentina	EPH-C	2003–2005 2022–2024	Children 0–5	58.5	64.7	6.2
			Children 6–12	66.5	74.9	8.4
			No children <13	66.5	79.2	12.7
Brazil	PNAD PNAD-C	2002–2004 2022–2024	Children 0–5	61.9	57.7	-4.2
			Children 6–12	69.6	67.6	-2.0
			No children <13	68.2	67.5	-0.7
Chile	CASEN	2000, 2003 2022	Children 0–5	34.0	63.3	29.3
			Children 6–12	41.3	68.6	27.3
			No children <13	44.9	71.7	26.8
Colombia	ECH GEIH	2002–2004 2022–2024	Children 0–5	63.5	61.2	-2.3
			Children 6–12	68.8	70.5	1.7
			No children <13	66.0	70.0	4.0
Mexico	ENIGH ENIGHNS	2002, 2004 2022, 2024	Children 0–5	43.1	52.5	9.4
			Children 6–12	53.3	63.4	10.1
			No children <13	54.2	65.6	11.4
United States	CPS	2002–2004 2022–2024	Children 0–5	63.3	72.3	9.0
			Children 6–12	74.9	79.4	4.5
			No children <13	79.7	84.5	4.8

Notes: The sample consists of all women age 25–54 who are household heads or spouses of household heads. Female LFP estimates are weighted using survey sample weights. Period definitions vary by country due to data availability. Differences are computed as Period 2 minus Period 1 (percentage points). In countries where more than one survey is used, the survey corresponding to Period 1 is listed on the first line and the survey corresponding to Period 2 is listed on the second line. See Appendix Table A.2 for full survey names. *Source:* Authors' calculations based on GenLAC and IPUMS.

4 Results

Over the period 2002–04 to 2022–24, labor force participation among female head/spouse of ages 25–54 increased across all six countries, though the magnitude of change varied considerably. The United States experienced a modest increase of 5.1 percentage points (from 74.5% to 79.6%), while Chile underwent the most dramatic transformation with a 21.9 percentage point increase (from 50.6% to 72.5%). Argentina, Brazil, Colombia, and Mexico experienced intermediate gains ranging from 3.5 to 14.1 percentage points. This section decomposes these aggregate changes to quantify the relative contributions of shifts in women's labor supply within demographic groups versus changes in the composition of the female population across those groups. We implement two complementary decompositions: first by child group alone, and then by the interaction of education and child group (child-education group).

We decompose the change in aggregate female labor force participation between the

two periods to quantify the relative importance of changes in group-specific participation rates versus changes in the demographic composition of the female population. This decomposition allows us to assess whether increases in women's LFP are primarily driven by changes within demographic groups (e.g., mothers of young children working more) or by compositional shifts (e.g., fewer women with young children).

Let t_0 denote the initial period (2002–04) and t_1 the final period (2022–24). Women of ages 25–54 are partitioned into mutually exclusive groups indexed by g, where the type of group depends on the analysis being conducted. Let $s_{g,t}$ denote the share of women in group g at time t, where $\sum_g s_{c,t} = 1$. Let $LFP_{g,t}$ denote women's labor force participation rate in group g at time t. Their aggregate LFP at time t can be written as $LFP_t = \sum_g s_{g,t} \cdot LFP_{g,t}$. Letting $\Delta LFP = LFP_{t_1} - LFP_{t_0}$ be the change in women's LFP between the two periods, we can decompose this change into a rate, composition, and interaction effect as shown in Equation 1.

$$\Delta LFP = \underbrace{\sum_g s_{g,t_0} \cdot \Delta LFP_g}_{\text{Rate Effect}} + \underbrace{\sum_g (LFP_{g,t_0} - LFP_{t_0}) \cdot \Delta s_g}_{\text{Composition Effect}} + \underbrace{\sum_g \Delta s_g \cdot \Delta LFP_g}_{\text{Interaction Effect}} \quad (1)$$

The rate effect measures the change in women's LFP that would occur if only group-specific participation rates changed but the distribution of women across groups remained constant at its initial composition. This component captures within-group changes. The composition effect instead measures the change in aggregate LFP attributable to changes in the distribution of women across groups, holding group-specific participation rates constant at their initial levels. This component captures the impact of demographic shifts (e.g. fertility decline and or educational upgrading). Note that the composition effect for group g is weighted by the deviation of that group's initial labor force participation rate from the aggregate average: groups with above-average participation that grow (shrink) in size contribute positively (negatively), whereas groups with below-average participation that grow (shrink) contribute negatively (positively). Although subtracting the initial average LFP makes no quantitative difference to the total composition effect (since $\sum_g \Delta LFP_{t_0}.\Delta s_g = 0$), it is useful to do so when we want to understand the contribution of a *specific* group to the change in LFP. Lastly, the interaction effect captures the covariance between changes in group shares and changes in within-group participation rates. A positive interaction occurs when groups that grow (shrink) in population share also experience increases (decreases) in participation rates.

We perform the decomposition separately by country, pooling observations from 2002–04/05 for the initial period and from 2022–24 for the final period. To facilitate cross-country comparisons, we compute the percentage contribution of each group to the total change in LFP. For group g, its percentage contribution is thus given by:

$$\text{Contribution}_g = 100 \times \frac{\text{Rate Effect}_g + \text{Composition Effect}_g + \text{Interaction Effect}_g}{\Delta LFP} \quad (2)$$

This metric allows us to identify which demographic groups are most important in driving female LFP changes in each country and to assess whether similar patterns emerge across countries.

4.1 Decomposition by Child Group

Figure 3 presents the basic data required to understand how having children of different ages shape labor force participation patterns and how these patterns evolved over our study period. Panel (a) shows LFP rates by child group across countries and periods; Panel (b) displays their corresponding population shares. In both panels, and for all groups, the lighter shade is the earlier period and the darker is the later period. The dashed lines in Panel (a) show the average female LFP in each period to facilitate understanding whether a group's participation was below or above this.

Several striking patterns emerge from Panel (a). First, in both periods and across all countries, Pre-K mothers exhibit substantially lower participation rates than women in other groups. The deviation from the country's average female LFP, however, varies considerably across countries. In the United States, Pre-K mothers participated at 63% in 2002–04 compared to 80% for None-under-13 women—a gap of 17 percentage points. By contrast, in Argentina, Chile, and Mexico during the same period, the same gap was close to 10–12 percentage points, representing a smaller absolute gap but at a significantly lower baseline participation level. Colombia and Brazil show a significantly smaller gap in participation by child group.

Second, participation rates increased within every child group in every country, indicating widespread changes in female labor supply not driven by child group. The gains were particularly pronounced in Chile, Mexico, and Argentina, more moderate in the United States, and quite small in Brazil and Colombia. Among Pre-K mothers, participation increased dramatically in Chile (from 44% to 66%, a 22 percentage point increase), substantially in Mexico (from 43% to 54%, an 11 percentage point increase) and in Argentina (from 58% to 68%, a 10 percentage point increase). In contrast, participation rates for Pre-K mothers barely changed in Brazil and Colombia. However, all countries—including Brazil and Colombia—experienced more significant increases in LFP among None-under-13 women.

Panel (b) reveals substantial shifts in the demographic structure of the female population across most countries, with the United States standing out as an exception. The share of Pre-K women declined in all Latin American countries, while remaining nearly stable in the United States. Chile, Colombia, and Mexico experienced the largest compositional shifts. In Chile, the share of Pre-K women fell from 28.8% to 26.3%, while the share of None-under-13 women rose sharply from 39.8% to 49.2%—a 9.4 percentage point increase. Similarly, in Colombia and Mexico, the share of None-under-13 women increased by 13–14 percentage points. Argentina and Brazil exhibited more moderate but still notable compositional changes. In Argentina, the share of Pre-K mothers de-

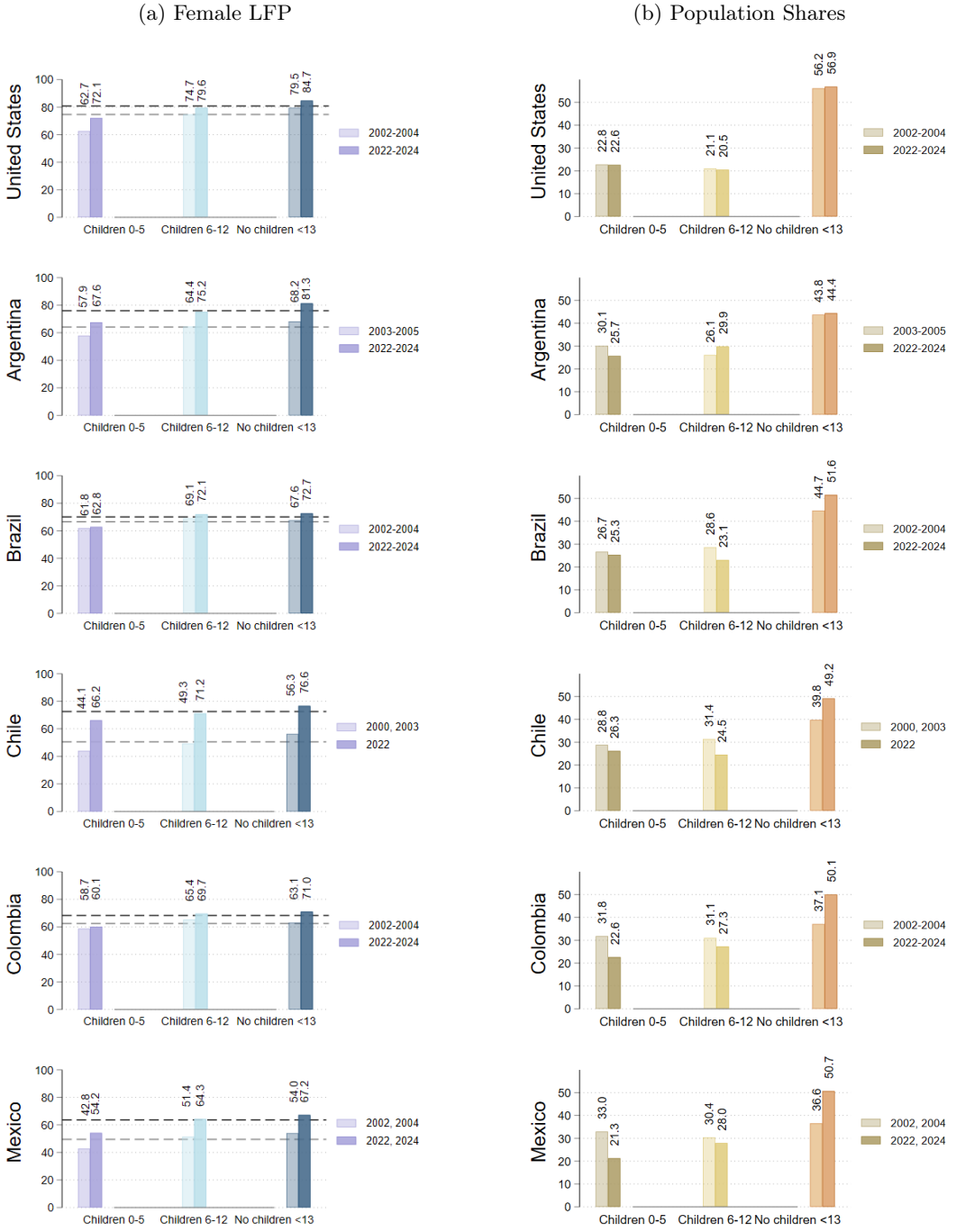
clined, whereas in Brazil the decline was greatest among School-Age children mothers. The overall compositional changes in the Latin American countries is consistent with the fertility decline documented in Figure 1. Women are less likely to be in a category with very young or young children as they are having fewer of them.

Figure 4 presents the aggregate decomposition results, quantifying the contributions to the change in LFP from changes within groups (the rate effect in green) versus compositional shifts across groups (the composition effect in yellow), or from the interactive effect of both changes (in red). The purple rectangle shows the total change in women's LFP over the two periods.

As can be seen clearly from the figure, despite substantial compositional shifts in the demographic structure of the female population across all countries, rate changes within groups account for the overwhelming majority of LFP growth. The composition effect is economically meaningful only in Chile and Mexico, yet even in these cases remains much smaller than the rate effect: in Chile, the rate effect contributed 21.3 of the 22 percentage point increase (97%) and in Mexico it accounted for 12.5 of the 14.1 percentage point rise (89%). The positive composition effect reflects the sharp increase in the share of None-under-13 women. The dominance of the rate change over compositional shifts indicates that rising LFP primarily reflects stronger labor market attachment within groups rather than the population shifting toward child groups with higher baseline participation.

Figure 5 translates these decomposition results into percentage contributions, identifying which groups drove LFP changes in each country by adding a group's rate, composition, and interaction effects and dividing by the total change in LFP. The heatmap reveals cross-country heterogeneity despite a common pattern: None-under-13 women are the primary driver of LFP growth everywhere, but their relative importance varies. This group accounts for around 50% of the total increase in Argentina, Chile, Mexico, and the United States—countries where participation gains were more evenly distributed across child categories—but accounts for over 70% in Brazil and Colombia, where the LFP of mothers with children under 13 experienced more modest gains. Underlying the importance of the group of women without children under 13 to the change in LFP is the positive reinforcement across all decomposition components: high baseline participation rates amplify the impact of any given rate change, growing population shares generate positive composition effects, and the interaction between rising rates and rising shares further boosts aggregate female LFP.

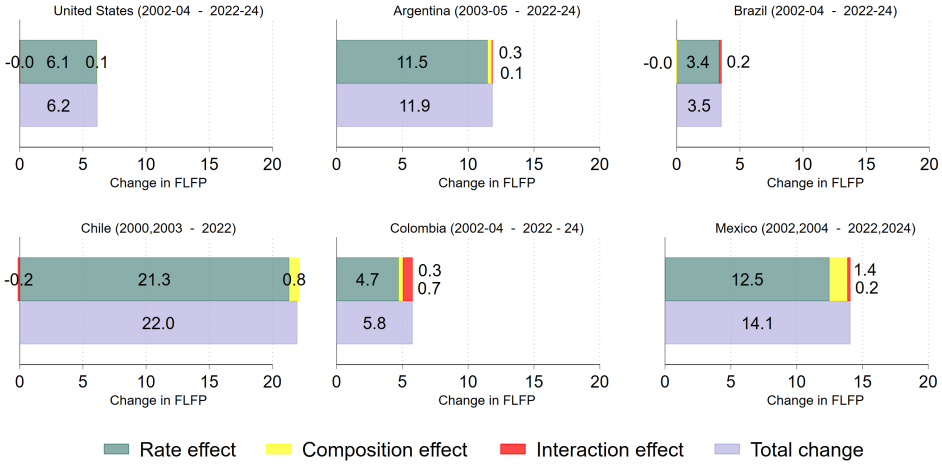
Figure 3: Female Labor Force Participation and Population Share by Child Group



Notes: The left panel shows LFP rates by child group across countries for women of ages 25–54 who are household heads or spouses of household heads, between circa 2002–04/05 and circa 2022–24 . The right panel reports the corresponding population shares of women in each child group. Child groups are defined as: Children 0–5 (at least one child age 0–5 i.e., "Pre-K" mothers), Children 6–12 (at least one child age 6–12 and no children age 0–5 i.e., "School-Age" mothers), and No children <13 (no children or no children younger than 13, i.e., "None-under-13" women). For each country, the period labels shown in the legend (purple in the left panel and brown in the right panel) indicate the survey years pooled for the early and recent periods; these same years apply to all three child groups within that country. The lighter shade of a given color represents the earlier period. See Appendix Table A.1 for the specific years used for each country. All estimates are weighted using survey sampling weights. *Source:* Authors' calculations based on GenLAC and IPUMS.

One possible interpretation of these results is that the disproportionate importance of the None-under-13 group to women's LFP increase is due to an underlying longer-term fertility decline (see Figure 1). That would mechanically make the share of older women larger than some 20 years earlier and, since these women are less likely to have children below the age of 13, they are responsible for the quantitative contribution of this child group. To address this question, Figure 6 decomposes the prior heatmap into three age ranges (25-34, 35-44, and 45-54). The figure clearly shows that in each Latin American country, the oldest age range of 45-54 within the None-under-13 group is the largest contributor to the change in LFP. In the US, it also plays a large role. Therefore a declining fertility trend is consistent with evidence. To eliminate this possibility the right-hand panel of the figure decomposes the quantitative contribution of the 45-54 age range in the None-under-13 group into its rate, composition, and interaction effect.[9] As is clear from the table, the rate effect completely drives the contribution of this group to changing LFP, with the composition effect actually contributing negatively for all countries with the exception of Argentina where it is close to zero.[10] Recall that the rate effect is the product of the change in LFP of that group and its original share in the population. Thus, this is telling us that it is the change in the behavior of this group that matters.

Figure 4: Aggregate Decomposition of Changes in FLFP by Child Group



Notes: This figure shows the decomposition of the aggregate change in female LFP between circa 2002–04/05 and circa 2022–24 by child group, as specified in Equation 1. The sample includes women aged 25–54 who are household heads or spouses of household heads. The three components (rate, composition, and interaction effects) are measured in percentage points. For Argentina, Colombia, and Mexico, the upper number indicates the composition effect, while the lower number indicates the interaction effect. All estimates are weighted using survey sampling weights. See Appendix Table A.1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

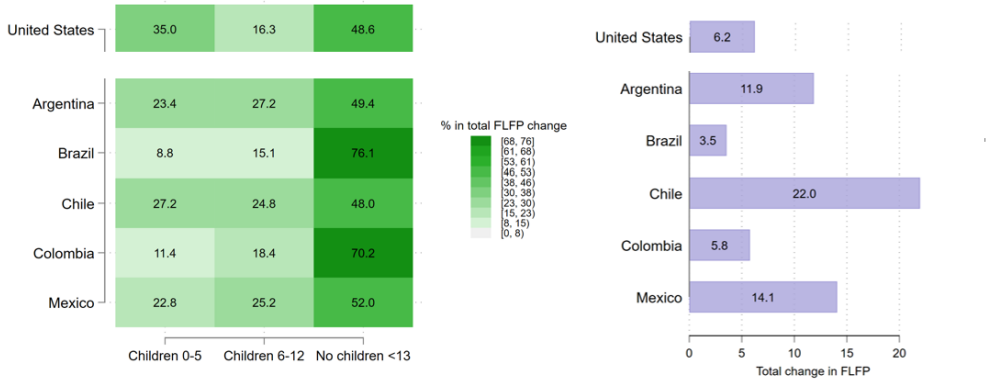
Returning to Figure 5, School-age mothers contribute between 15% (Brazil) to 27%

[9]Note that the sum of the rate, composition, and interaction effect in the table add up to the number in the last column of the heatmap for each country.

[10]The negative composition effect comes from the interaction of the increase in this group's share and the fact that its LFP was below the country average in the early period as can be seen in Figure 2.

(Argentina) of total LFP growth while the contribution of Pre-K mothers ranges from 9% in Brazil to 35% in the United States. The pattern in the United States is particularly notable: mothers with the youngest children account for over one-third of the increase in LFP despite representing 23% of the population—a disproportionately large contribution driven by substantial participation gains (9 percentage points) and stable population shares that generate large rate effects without offsetting composition effects.

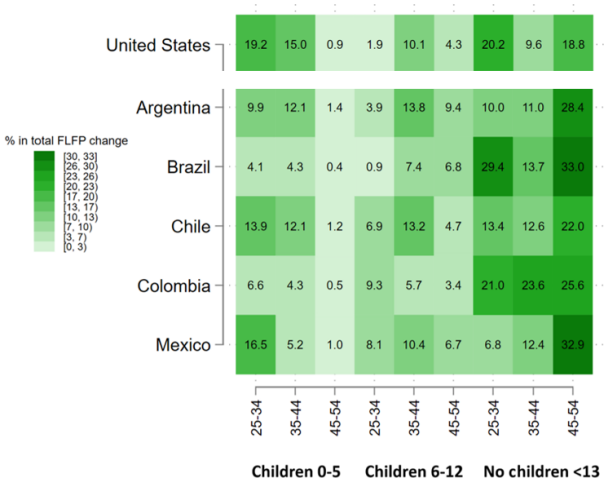
Figure 5: Contribution by Child Group to the Change in Female LFP



Notes: The left-hand panel displays a heatmap showing the contribution of each child group to the total change in female LFP between circa 2002–04/05 and circa 2022–24 for women age 25–54 who are household heads or spouses of household heads, expressed as a percentage of the overall change for these women's LFP in each country. Darker colors correspond to larger absolute contributions. Intervals are defined by dividing the range of contributions from 0 to the maximum observed value into 10 equal-sized intervals. The right-hand panel reports the overall change in female LFP between circa 2002–04/05 and circa 2022–24 for each country (in percentage points). See Figure 3 for child group definitions. All estimates are weighted using survey sampling weights. See Appendix Table A.1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

Figure 6: Contribution by Child Group and Age to the Change in Female LFP

(a) Contribution by Child Group and Age



(b) Decomposition of the 45-54 with No Children $<$ 13 group

Country	Rate	Composition	Interaction
United States	20.6	-0.5	-1.3
Argentina	30.4	0.3	-2.3
Brazil	33.8	-4.8	4.0
Chile	19.7	-0.1	2.4
Colombia	24.3	-4.3	5.5
Mexico	22.6	-0.8	11.1

Notes: The left-hand panel displays a heatmap showing the contribution of each age-child group to the total change in female LFP between circa 2002–04/05 and circa 2022–24 for women age 25–54 who are household heads or spouses of household heads, expressed as a percentage of the overall change for these women's LFP in each country. Darker colors correspond to larger absolute contributions. Intervals are defined by dividing the range of contributions from 0 to the maximum observed value into 10 equal-sized intervals. The right-hand panel decomposes the contribution of the 45-54 group in the No Children $<$ 13 category into its rate, composition, and interaction effect. See Figure 3 for child group definitions. Age ranges are defined as: 25–34, 35–44, and 45–54. All estimates are weighted using survey sampling weights. See Appendix Table A.1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

4.2 Decomposition by Education and Child Group

We next examine the role of education and its interaction with the presence of children in shaping female LFP trends. Figure 7 presents LFP rates and population shares by education-child groups, revealing both the persistent education gradient in participation and the increase in education that occurred over this period. Between 2003 and 2023, average years of schooling increased in all countries: Argentina (9.9 to 11.2 years), Brazil (5.8 to 8.4), Chile (9.6 to 11.3), Colombia (7.9 to 9.0), Mexico (7.1 to 9.4), and the United States (12.8 to 13.9).

We divide the population into six groups: the same three child crossed with two education groups—less than high school and high school+ (high school completed or more). These categories are defined differently in Latin America and the US. For the Latin American countries, less than HS means that these women have not obtained a high-school degree. For the United States, this group has obtained a high-school degree but not gone further. Therefore, HS+ means high school degree and above for the Latin American countries and *strictly more* than a high school degree for the US. We need different definitions since, had we used the same definition for the US the proportion with strictly less than high school would have been far too small – 7.5% in the more recent period. Overall, during this period women without a high school degree went from being

close to 50% of the population in Argentina and Chile to close or less than one fourth of the sample. In Brazil, Colombia, and Mexico, women without a high school degree went from between 64-76 percent of the population to less than one-third of the population in Colombia and Brazil, but still accounting for around 59% in Mexico. Appendix Table A.4 gives the proportion of women in each category by country and period.

Panel (a) shows that participation rates rise sharply with education across all countries, periods, and child categories. Education gradients are substantial and persist over time: in Argentina, the LFP gap between high-school + and less than high school women ranges from 13 to 23 percentage points across child groups in both periods. In Chile, LFP gaps by education reach 23 percentage points for mothers with children under 13 in 2000–03, narrowing slightly to 20 percentage points by 2022. Mexico and Colombia exhibit similar patterns, with education gaps of 11–24 percentage points depending on the child group.

Importantly, participation trends within education-child groups vary considerably across countries, revealing heterogeneity masked by aggregate statistics. In Chile, Argentina, and Mexico, participation increased for every education-child group. This is also the case for the US. In contrast, Brazil and Colombia exhibit mixed patterns: some groups experienced participation gains while others declined or stagnated. In Brazil, LFP among less-educated mothers fell across all child categories and increased only slightly for high-school + mothers without Pre-K children. In Colombia, participation fell for all groups irrespective of the woman's education except for the Non-under-13 group, which increased slightly. These divergent within-country patterns explain why aggregate LFP growth was modest in Brazil and Colombia despite substantial increases in education.

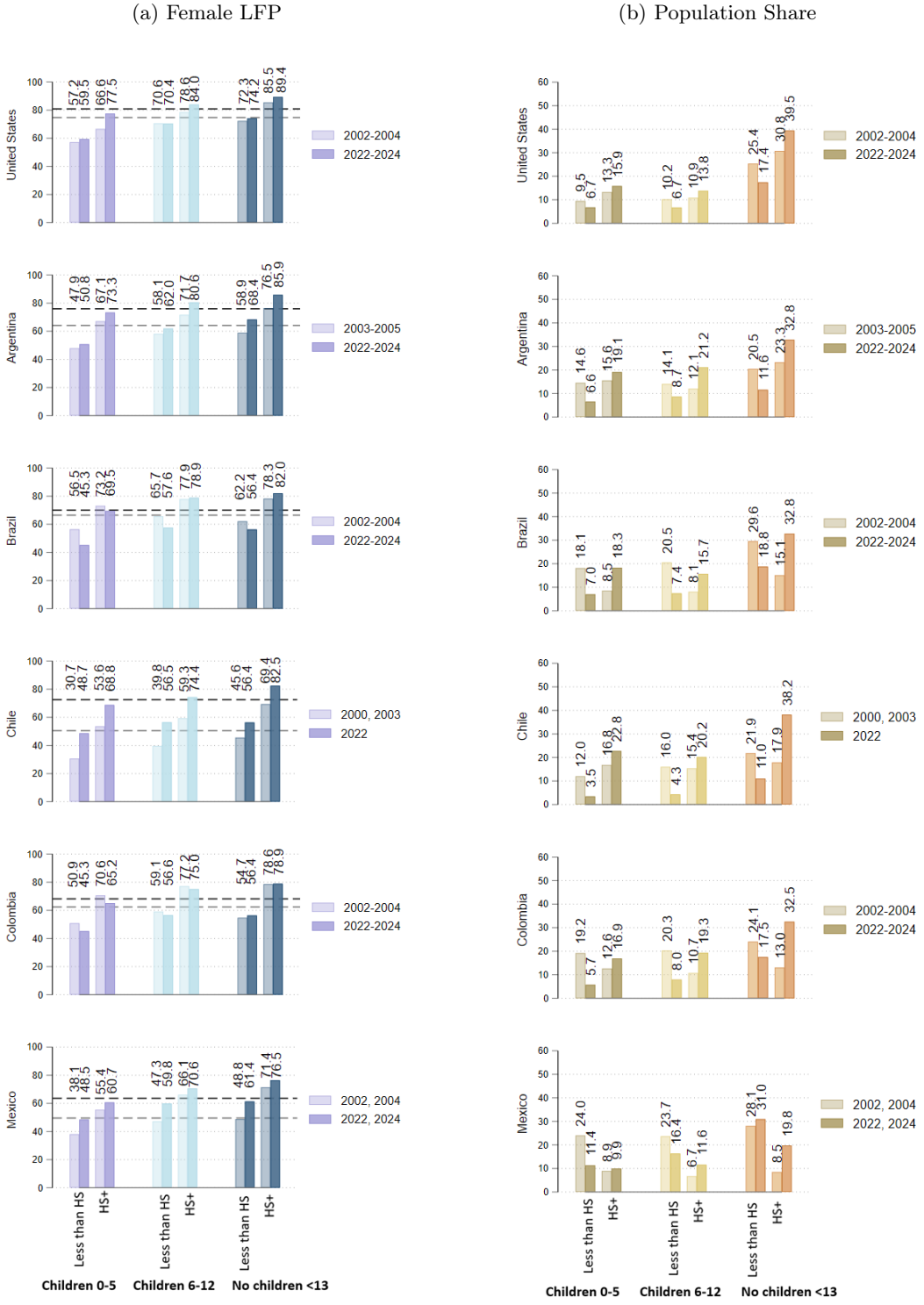
Panel (b) documents the increases in education across the Latin American countries in our sample in all child categories. This increase is most pronounced among None-under-13 women, reflecting both cohort effects and selection into motherhood by education. The United States also shows a similar pattern.

Figure 8 presents the decomposition results for the child-education groups. In Chile, Argentina, and Mexico, the rate effect remains dominant (contributing 14.4, 7.1, and 10.2 percentage points, respectively, to the overall change in each country's LFP), but the composition effect now plays a substantially larger role than seen in the previous heat map which only considered child group (it is 7.9, 4.1, and 4.9 percentage points, respectively). This change in the importance of the composition group captures the boost to aggregate LFP as increased education shifted women from the low-participation, less-educated groups to high-participation, more-educated groups. In Brazil and Colombia, on the other hand, the pattern is very different: the composition effect is dominant (5.3 and 7.2 percentage points) and moves in the *opposite direction* to the rate effect. In these two countries, had women not become more educated, female LFP would have declined (ceteris paribus). In the United States the composition effect is small (1.7 percentage points), but similarly to Argentina, Chile, and Mexico, it moves in the same direction as the rate effect and accounts for a substantial percentage contribution to the change in

LFP.

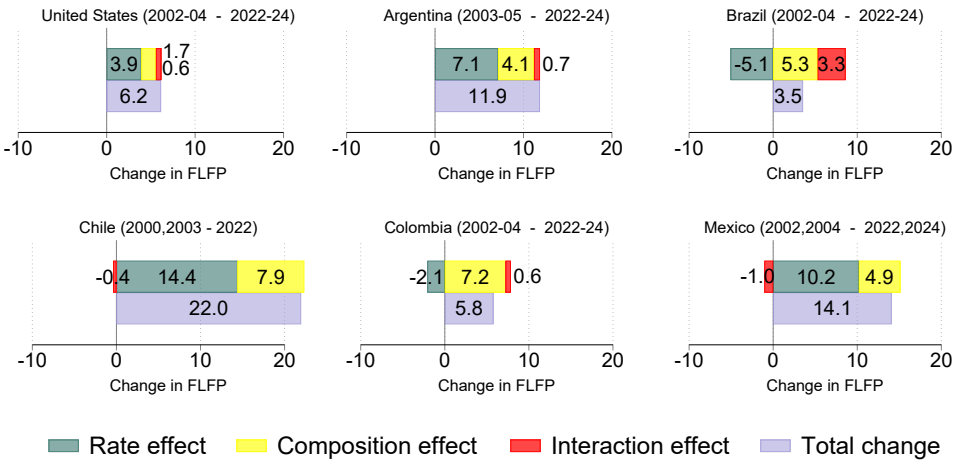
Figure 9 allows us to identify which groups are quantitatively most important for the change in women's LFP. Among None-under-13 women—the primary drivers of aggregate LFP growth—gains are concentrated among high-school+ women in all countries except Mexico, where contributions are more evenly distributed across both education groups and child categories. Among School-Age mothers, high-school+ women also contributed more substantially across all countries, reflecting both their rising population share through educational upgrading and their above-average participation rates. For Pre-K mothers, education gradients in contributions vary considerably across countries. In Chile and the United States, high-school+ mothers contributed disproportionately to total LFP growth (17% and 25%, respectively). In contrast, Brazil and Colombia exhibit a puzzling pattern: high-school+ mothers with Pre-K children contributed negatively to LFP growth. This is a result of the decrease in this group's LFP in both countries as compared to the other countries in our sample. Less-educated mothers with Pre-K children, in contrast, contributed positively to LFP growth in all countries, especially in Mexico and Colombia. In Colombia, this positive contribution stemmed primarily from composition effects: this group's population share declined sharply and since their participation rate was well below average, this worked to increase aggregate LFP despite this group's decreasing participation rate. In Mexico, this group's participation increased by 10 percentage points, generating a strong positive rate effect that combined with a positive composition effect from their declining share and below-average participation rates in the initial period.

Figure 7: Female Labor Force Participation and Population Share by Education-Child Group



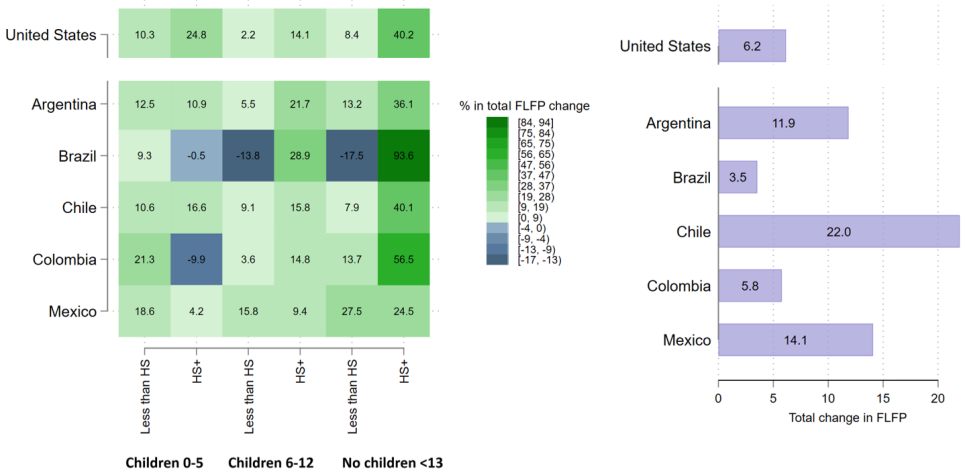
Notes: The left panel shows LFP rates by child-education group cross countries for women of age 25–54 who are household heads or spouses of household heads, between circa 2002–04/05 and circa 2022–24. The right panel reports the corresponding population shares of women in each child group and education level. See Figure 3 for child group definitions. Education categories are defined as: Less than HS and HS+. For the Latin American countries, Less than HS means that these women have not obtained a high-school degree. For the United States, this group has obtained a high-school degree but not gone further. Therefore, HS+ means high school and above for the Latin American countries and strictly more than high school for the US. For each country, the period labels shown in the legend (purple in the left panel and brown in the right panel) indicate the survey years pooled for the early and recent periods; these same years apply to all child and education groups within that country. See Appendix Table A.1 for the specific years used for each country. All estimates are weighted using survey sampling weights. *Source:* Authors' calculations based on GenLAC and IPUMS.

Figure 8: Decomposition of Changes in FLFP by Child-Education Group



Notes: This figure shows the decomposition of the aggregate change in female labor force participation between circa 2002–04/05 and circa 2022–24 by child group and education category, as specified in Equation 1. The sample includes women aged 25–54 who are household heads or spouses of household heads. The three components (rate, composition, and interaction effects) are measured in percentage points. In the United States, the upper number indicates the composition effect and the lower number indicates the interaction effect. All estimates are weighted using survey sampling weights. See Appendix Table 1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

Figure 9: Contribution of Child-Education Groups to the Change in Female LFP



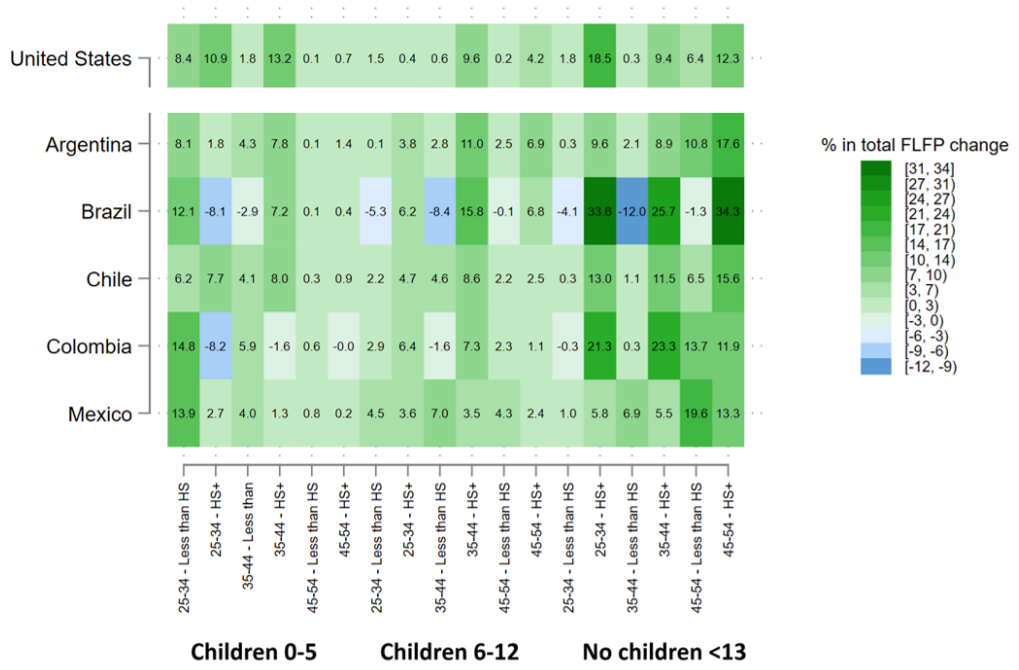
Notes: The left-hand panel displays a heatmap showing the contribution of each cell defined by a combined child group and education category to the total change in female LFP between circa 2002–04/05 and circa 2022–24 for women age 25–54 who are household heads or spouses of household heads, expressed as a percentage of the overall change for these women's LFP in each country. Green shades indicate positive contributions to the total change, while blue shades indicate negative contributions. Darker colors correspond to larger absolute contributions. Intervals are defined by dividing negative contributions (minimum to 0) into 4 equal-sized bins and positive contributions (0 to maximum) into 10 equal-sized bins. See Figure 3 for child group definitions and Figure 7 for education categories. All estimates are weighted using survey sampling weights. See Appendix Table 1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

To determine whether the dominant contribution of high-school + women in the None-under-13 group to the overall change in LFP reflects younger cohorts delaying childbearing

versus a broader transformation across age groups, we extend our decomposition to include age alongside education and child groups. This allows us to separate cohort-specific dynamics (e.g. young, educated women postponing motherhood) from widespread increases in the participation of HS+ women in the group of None-under-13 women across all ages.

Figure 10 reveals which age-education-child groups contributed most to LFP changes. In all countries, high-school + women in the None-under-13 child group contribute substantially across *all age groups*, not just among the young, indicating that the phenomenon extends well beyond young cohorts delaying childbearing. For instance, in Chile (the country with the biggest LFP increase over this period) contributions from the group of women without children under 13 are relatively evenly distributed across ages: women aged 25–34 contribute 13%, those aged 35–44 contribute 11.5%, and those aged 45–54 contribute 15.6% of total LFP growth. These patterns indicate that the dominant contribution of high-school+ women in the None-under-13 group is not solely driven by young, educated women postponing motherhood, but represents a broader transformation affecting women across the working-age distribution.

Figure 10: Contribution of Age-Education-Child Groups to the Change in Female LFP



Notes: The figure presents a heatmap showing the contribution of each group – defined by age range-education-child – to the total change in female LFP between circa 2002–04/05 and circa 2022–24 for women age 25–54 who are household heads or spouses of household heads, expressed as a percentage of the overall change in female LFP in each country. Green shades indicate positive contributions to the total change, while blue shades indicate negative contributions. Darker colors correspond to larger absolute contributions. Intervals are defined by dividing negative contributions (minimum to 0) into 4 equal-sized bins and positive contributions (0 to maximum) into 10 equal-sized bins. See Figure 3 for child group definitions, Figure 7 for education categories, and Figure 6 for age ranges. See Appendix Table A.1 for the specific years used for each country. All estimates are weighted using survey sampling weights. *Source:* Authors' calculations based on GenLAC and IPUMS.

5 Conclusion

Over the last two decades, female labor force participation and fertility evolved jointly across Latin America, with participation rising as fertility declined. This paper studies the extent to which changes in fertility (as captured by the shifts in the population with younger children) and increases in education within these child groups can account for the observed increase in women's labor supply in the region. We focus on the five largest Latin American economies—Argentina, Brazil, Chile, Colombia, and Mexico—and use the United States as a comparison country. We decompose changes in aggregate female labor force participation between 2002–04 and 2022–24 into composition effects driven by shifts in fertility and education, and rate effects reflecting changes in labor supply behavior within demographic groups. We define these groups based on education and the age of children in the household ("child groups"), distinguishing women with children under age 6, with children aged 6–12, and those without children under age 13 as well as those women who have more or less than a high-school degree.

We find that the increase in female labor force participation over the past two decades is driven overwhelmingly by changes in women's labor supply within child groups rather than by compositional shifts induced by fertility decline. The main driver of rising participation is a broad-based strengthening of labor market attachment within child groups, particularly among women without children under age 13, who combine high baseline participation rates with sizable increases over time. By contrast, changes in the distribution of women across child groups explain only a limited fraction of aggregate participation growth.

When we further disaggregate child groups by education, the role of composition becomes more nuanced, as educational upgrading accounts for a nontrivial share of participation growth. In the United States, Argentina, Chile, and Mexico, this composition effect accounts for one-third of the increase in female labor force participation, whereas it exceeds 100 percent in Brazil and Colombia. This reflects the fact that in Brazil and Colombia female LFP increased little or declined within most child–education groups, so that aggregate gains are explained primarily by educational upgrading rather than by increases in labor supply within groups. A common pattern across all countries, however, is that the largest contributors to the rise in female labor force participation were more educated women without children under age 13.

It is difficult (perhaps foolhardy) to predict how women's labor force participation will evolve over time in Latin America. Several forces are likely to play important roles: women's education will undoubtedly continue to increase along with their attachment to the labor force and their careers. Employers may increase job flexibility and governments may decide to facilitate the provision of subsidized high-quality childcare, both of which would encourage the work-force participation of women with young children. The speed and depth of cultural change, particularly as regards gender roles towards care work may matter most, both in hastening the responses of firms and governments but also by chang-

ing the gender division of labor.[11] Were the participation of men in childcare to markedly increase, for example, it would make the combination of children and market work more attractive to women, as some recent papers suggest, increasing both fertility and labor supply.[12] Nonetheless, the heterogeneity in experiences seen over the twenty year period in our study ranging from a 4 percentage point increase (Colombia) to a 23 percentage point increase (Chile) makes it clear that we need far greater understanding of the mechanisms that determine both fertility and its connection to labor force participation and labor supply more generally to have any confidence in statements about the future.

[11] The evolution of culture is endogenous as well. See Fernández (2025).

[12] See, for example, Doepke et al. (2023), Kearney and Levine (2025), Briselli and González (2025), and Goldin (2025).

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Data Appendix

Table A.1: Definition of Periods by Country

Country	Period 1	Period 2
Argentina	2003, 2004, 2005	2022, 2023, 2024
Brazil	2002, 2003, 2004	2022, 2023, 2024
Chile	2000, 2003	2022
Colombia	2002, 2003, 2004	2022, 2023, 2024
Mexico	2002, 2004	2022, 2024

Notes: The table reports the survey years included in each period for every country. Period definitions vary across countries due to differences in survey availability and questionnaire comparability. *Source:* GenLAC and IPUMS.

Table A.2: Full names of surveys used in the analysis

Country	Name of Survey
Argentina	Encuesta Permanente de Hogares Continua (EPH-C)
Brazil	Pesquisa Nacional por Amostra de Domicilios (PNAD)
Brazil	Pesquisa Nacional por Amostra de Domicilios – Continua (PNAD-C)
Chile	Encuesta de Caracterización Socioeconómica Nacional (CASEN)
Colombia	Encuesta Continua de Hogares (ECH)
Colombia	Gran Encuesta Integrada de Hogares (GEIH)
Mexico	Encuesta Nacional de Ingresos y Gastos de los hogares (ENIGH)
Mexico	Encuesta Nacional de Ingresos y Gastos de los hogares nueva serie (ENIGHNS)
United States	Current Population Survey (CPS)

Notes: The table reports the full names of the surveys used in the analysis. *Source:* GenLAC and IPUMS.

Table A.3: Sample Sizes by Country, Period, and Group

Period	Group	Argentina	Brazil	Chile	Colombia	Mexico	United States
Circa 2002–04	Children 0–5	11,549	53,968	22,513	17,566	8,729	142,690
	Children 6–12	9,501	51,376	22,984	17,505	7,244	129,863
	No children <13	16,608	95,683	32,116	29,120	9,659	394,256
Circa 2022–24	Children 0–5	10,613	46,443	7,009	88,851	21,756	316,487
	Children 6–12	11,792	43,035	7,846	95,992	25,269	283,260
	No children <13	23,883	115,965	16,621	231,340	50,112	821,981

Notes: Sample includes women aged 25–54 who are household heads or spouses of household heads. Sample sizes are unweighted counts of observations. See Table A.1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.

Table A.4: Educational attainment of women by country and period

Country	Education group	Period 1 (%)	Period 2 (%)
Argentina	HS+	50.90	73.14
	Less than HS	49.10	26.86
Brazil	HS+	31.75	66.81
	Less than HS	68.25	33.19
Chile	HS+	50.10	81.18
	Less than HS	49.90	18.82
Colombia	HS+	36.42	68.78
	Less than HS	63.58	31.22
Mexico	HS+	24.17	41.29
	Less than HS	75.83	58.71
United States	HS+	54.92	69.12
	Less than HS	45.08	30.88

Notes: Entries report the percentage of women in each education group within each period. Sample includes women aged 25–54 who are household heads or spouses of household heads. Education levels are defined as: Less than HS and HS+. For the Latin American countries, Less than HS means that these women have not obtained a high-school degree. For the United States, this group has obtained a high-school degree but not gone further. Therefore, HS+ means high school and above for the Latin American countries and strictly more than high school for the US. All estimates are weighted using survey sampling weights. Period 1 corresponds to circa 2002–04; Period 2 corresponds to circa 2022–24. See Table A.1 for the specific years used for each country. *Source:* Authors' calculations based on GenLAC and IPUMS.