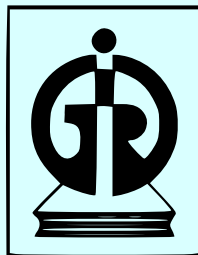


How Maternity Leave Policies Affect Female Employment: A Cross Country Analysis

Shameena Khatoon



INDIRA GANDHI INSTITUTE OF DEVELOPMENT RESEARCH

May 2026

How Maternity Leave Policies Affect Female Employment: A Cross Country Analysis

Shameena Khatoon

Email (corresponding author): shameena.k@igidr.ac.in

ABSTRACT

This study examines how maternity leave policies affect female labor force participation (FLP) across 160 countries from 2000 to 2023. We analyze the crucial but overlooked dimension of payment structure whether governments or employers bear the costs. Using fixedeffects panel regression models, we find that leave duration alone shows no significant effect on FLP in full sample. However, government-funded maternity leave is associated with 1.49 percentage points higher participation rates. Crucially, we uncover heterogeneous effects by income level: in upper-middle-income countries, longer leave durations reduce FLP when costs fall on employers, but this negative effect vanishes when leave is publicly funded. In low-income countries, extended leave modestly boosts participation, while high-income countries show diminishing returns to paid leave. Our findings challenge the assumption that longer leave universally benefits FLP, demonstrating instead that policy design especially public financing is pivotal for mitigating unintended labor market disincentives. These insights are critical for policymakers seeking to balance gender equity with economic efficiency in maternity leave reforms.

Keywords: Maternity leave, female labor force participation, Fully government funded leave, paid leave, policy design, income heterogeneity, fixed-effects regression.

JEL Code: J13, J16, J21, J22

How Maternity Leave Policies Affect Female Employment: A Cross Country Analysis

Shameena Khatoon

Master's Thesis

Under the guidance of
Dr. Bharti Nandwani

How Maternity Leave Policies Affect Female Employment: A Cross Country Analysis

May 5, 2026

Abstract

This study examines how maternity leave policies affect female labor force participation (FLP) across 160 countries from 2000 to 2023. We analyze the crucial but overlooked dimension of payment structure whether governments or employers bear the costs. Using fixed-effects panel regression models, we find that leave duration alone shows no significant effect on FLP in full sample. However, government-funded maternity leave is associated with 1.49 percentage points higher participation rates. Crucially, we uncover heterogeneous effects by income level: in upper-middle-income countries, longer leave durations reduce FLP when costs fall on employers, but this negative effect vanishes when leave is publicly funded. In low-income countries, extended leave modestly boosts participation, while high-income countries show diminishing returns to paid leave. Our findings challenge the assumption that longer leave universally benefits FLP, demonstrating instead that policy design especially public financing is pivotal for mitigating unintended labor market disincentives. These insights are critical for policymakers seeking to balance gender equity with economic efficiency in maternity leave reforms.

Key Words: Maternity leave, female labor force participation, Fully government funded leave, paid leave, policy design, income heterogeneity, fixed-effects regression.

1 Introduction

The persistent gender gap in labor force participation represents both a fundamental challenge to gender equality and a significant loss of economic potential. Despite notable progress in women's education and legal rights, female labor force participation rates continue to lag behind those of men in most countries. One commonly cited explanation in the literature is the motherhood penalty (Biswas, 2022): women face a maternity shock, which is uncertain and makes the lifetime expected asset values of male and female labor asymmetric. Maternity leave policies have emerged as a key institutional mechanism aimed at supporting women's continued participation in the workforce by addressing career disruptions associated with childbearing. However, the effectiveness of these policies depends not only on their duration of maternity leave provided but also on their institutional design, particularly the allocation of financial responsibility between governments and employers. Maternity leave can influence female labor force participation in two opposing ways. On the one hand, it may increase participation by allowing women to remain in the workforce while choosing motherhood, thereby reducing job attrition. On the other hand, if the financial burden of mandated leave is shifted onto employers, it can lead to unintended adverse effects. Employers may develop a bias against hiring or promoting women due to the additional costs of paid leave and temporary replacement, ultimately discouraging female employment.

This study provides a comprehensive cross-country analysis of how maternity leave duration and payment structure jointly influence female labor force participation (FLP). Using panel data from 160 countries spanning the period 2000–2023, we address four key research questions. First, what is the overall relationship between maternity leave duration and FLP. Second, does government-funded maternity leave have a distinct effect on FLP compared to non government-funded maternity leave. Third, how does the impact of maternity leave duration on FLP change depending on whether the leave is government-funded or not. Fourth, how do these relationships vary across low-income, lower middle-income, upper middle income and high-income country contexts?

A growing body of research highlights the complex labor market effects of maternity leave poli-

cies, with findings varying significantly across contexts. While some studies document negative consequences such as reduced wages and employment for women in the U.S (Timpe, 2024), India (Gupta, 2023), and China (Liu et al., 2024) others find neutral or positive outcomes, particularly with shorter leave durations (Bates et al., 2023) or in lower-income settings (Chai et al., 2021). A critical gap persists, however: most cross-country studies focus exclusively on leave duration while neglecting payment structure, despite evidence that financing mechanisms may mediate policy effects (Olivetti Petrongolo, 2017; Aslim et al., 2021). This study advances the literature by systematically analyzing how the payment source (government vs. employer-funded) shapes the relationship between leave duration and female labor force participation across 160 countries, offering new insights for policy design.

Our empirical analysis, employing fixed-effects regression models with comprehensive controls for economic, social, and institutional factors, yields three principal findings regarding maternity leave policies and female labor force participation (FLP). First, we observe that maternity leave duration alone exhibits no statistically significant effect on FLP in the aggregate sample. However, the payment structure emerges as a critical determinant: a fully government funded maternity leave is associated with a 1.49 percentage point increase in participation rates compared to employer-funded systems. Second, we identify substantial heterogeneity in policy effects across income groups. The impact of leave duration follows a distinct pattern: positive in low-income countries (0.6 percentage point increase per additional week), negative in upper-middle and high-income countries, and insignificant in lower-middle-income nations. Similarly, the benefits of government funding concentrate in upper-middle-income countries, where fully government funded maternity leave increases FLP by 3.26 percentage points relative to low-income countries with no fully funded government leave. Third, and most critically, our analysis reveals that in upper-middle-income countries, government financing completely neutralizes the negative consequences of extended leave durations that characterize non-fully funded systems, producing a net positive effect. This finding suggests that the advantages of government funding are most pronounced in economies with sufficiently developed formal labor markets that remain sensitive to

employer costs.

These results carry significant policy implications, demonstrating that the financing mechanism of maternity leave is equally as consequential as its duration in determining labor market outcomes. The findings are particularly relevant for emerging economies considering maternity policy reforms, suggesting that simply extending leave durations without addressing funding mechanisms may fail to achieve or could even undermine the goal of increasing women's labor force participation. The study provides policymakers with empirical evidences for designing maternity leave systems that genuinely promote gender equality in the labor market.

The study proceeds as follows. Section 2 reviews the literature on maternity leave policies and labor market outcomes. Section 3 describes the data sources and key variables. Section 4 outlines the empirical strategy. Section 5 presents the main results on how maternity leave duration and payment structure affect female labor force participation. Section 6 addresses identification concerns through robustness checks, lagged policy specifications and discusses remaining limitations, with the results presented in the Appendix. Section 7 concludes with policy implications.

2 Literature Review

A growing body of literature has explored the labor market consequences of maternity leave policies, yet findings remain mixed and highly context-dependent. While these policies are designed to support maternal health and promote gender equality, several studies suggest that they can also produce unintended adverse effects.

Country-level studies provide evidence of these unintended consequences. In the United States, Timpe (2024) finds that the introduction of paid maternity leave increased leave-taking among new mothers but also reduced wages, employment, and family income among women of childbearing age—ultimately exacerbating labor market gender gaps. In India, Gupta (2023) documents that the 2017 expansion of paid maternity leave to 26 weeks led to a substitution of female employees by male counterparts in formal firms, while Biswas (2021) shows that women in high-fertility age

groups experienced negative labor market effects in the presence of mandated leave. Similar trends are observed in China, where Liu et al. (2024) find that extensions of leave entitlements reduced formal employment, labor force participation, and earnings among women. In Colombia, Tribin et al. (2019) show that longer leave increased the probability of unemployment and informality, while reducing women's wages relative to men. In Germany, Ludsteck (2014) finds that while short-run post-birth employment rates declined with successive expansions in leave coverage, the long-term labor market effects were relatively muted.

At the same time, not all studies point to significant labor market disruptions. Baum (2003), analyzing U.S. state maternity leave legislation and the 1993 Family and Medical Leave Act, finds small and statistically insignificant effects on employment and wages. Likewise, Corekcioglu et al. (2024), studying Norway, find no significant long-run effects on women's chances of reaching top pay or executive roles despite expanded parental leave.

Cross-country studies offer broader comparative insights. Bates et al. (2023), analyzing data from 24 European countries, find a non-linear relationship between maternity leave duration and women's labor force attachment: short leaves (up to three months) are associated with increased attachment, while longer leaves reduce it. Lee and Jung (2024), examining 29 OECD countries, similarly confirm an inverted U-shaped association between leave duration and maternal employment. In contrast, Fallon et al. (2017), using data from 121 developing countries, find no significant relationship between maternity leave and female labor force participation. Other studies have documented more favorable outcomes in lower- and middle-income contexts: Chai et al. (2021) find that enhanced paid maternity leave promotes gender equality in household decision-making and improves gender norms in 31 low and middle income countries, while Aslim et al. (2021) find modest positive effects on female labor force participation, along with stronger increases in male labor supply.

The existing literature exhibits a significant limitation that the current study aims to address. Most cross-country studies have focused primarily on the duration of maternity leave as the key policy variable, often overlooking the equally important dimension of the payment structure. While

Olivetti and Petrongolo (2017) included the source of payment as a control variable in their analysis of 30 OECD countries, they did not examine it as a central explanatory factor or investigate how its effects might differ across varying economic contexts. Similarly, Aslim et al. (2021) accounted for the payment source in their study of 21 emerging economies but did not explore its independent role in shaping labor market outcomes.

This study contributes to the literature by directly addressing this limitation. First, we treat the payment source as a central explanatory variable rather than a secondary control. Second, we expand the geographic scope of analysis to include a sample of countries across all levels of development. Third, we explicitly model the interaction between leave duration and payment structure, allowing us to test whether government funding mitigates the potential negative effects of extended leave. Finally, we examine how these relationships vary across different economic contexts.

3 Data

This study uses a panel dataset spanning from 2000 to 2023, primarily sourced from the World Bank. The dependent variable in the analysis is the Female Labor Force Participation Rate for individuals aged 15 and older (FLP), derived from the World Development Indicators (WDI).

The key explanatory variables include the duration of maternity leave measured in weeks and the source of maternity leave payment. The payment source is a binary variable, indicating whether the government fully funds maternity leave. A value of 1 signifies that the government covers the entire cost of maternity leave, while a value of 0 indicates that the cost is either partially covered by the employer or completely borne by the employer. These data are obtained from the Women, Business and the Law (WBL) database, which provides information on maternity leave payment structures for 184 countries.

Due to data availability constraints, the final balanced panel for the study includes 160 countries, covering a 24-year period. This restriction arises from missing data for certain covariates and

the dependent variable for an additional 24 countries. India is excluded from the analysis due to inconsistencies in the payment source variable post-2020.

For the classification of countries by income levels, we use the World Bank's income classification for the year 2025, which categorizes countries as high income, upper-middle income, lower-middle income, and low income.

Several control variables are included in the model to account for factors that may influence female labor force participation. These include the unemployment rate, which captures cyclical labor market conditions; the share of women in national parliaments, as a proxy for female representation in public life, the log of GDP per capita to control for differences in economic development, and tertiary school enrollment rates, which reflect the level of education among women and its potential positive impact on labor market participation.

In addition to these standard controls, we construct a composite Attitude Towards Women Index, based on 30 binary indicators. This index reflects various aspects of gender equity, including women's mobility, workplace rights, pay equity, marriage rights, entrepreneurship, asset ownership, and pension entitlements. Each indicator is assigned a value of 1 if the condition is favorable for women and 0 if it is not, with the final index score ranging from 0 to 30. A higher score indicates a more equitable environment for women. The index is adapted from the WBL index but excludes the Parenthood dimension to avoid multicollinearity with the key explanatory variables of maternity leave duration and payment source. More details are available in the appendix.

Table 1 presents the summary statistics for all variables included in the analysis. The summary statistics reveal substantial variation across key variables in our sample of 159 countries. Female labor force participation averages 49.8% but ranges widely from 4.9% to 87.8%, reflecting significant cross-national differences in women's workforce engagement. Maternity leave duration shows particularly notable variation, with a mean of 100.5 weeks ($SD=58.97$) and extremes ranging from no mandated leave to 410 weeks. The payment structure variable indicates that 53.6% of countries feature fully government-funded maternity leave. Economic and institutional controls exhibit expected variation, with GDP per capita (log) ranging from 4.7 to 11.8 and the gender

Table 1: Summary Statistics

	Mean	SD	Min	Max
Female Labour Force Participation(15+)	49.791	15.604	4.939	87.825
Duration of Maternity Leave(weeks)	100.476	58.971	0.000	410.000
Payment Source	0.536	0.499	0.000	1.000
Log GDP	8.483	1.523	4.697	11.803
Share of Women in Parliament (%)	19.684	11.703	0.000	63.750
Enrollment in tertiary education (%)	45.282	32.599	0.170	171.990
Unemployment Rate (%)	7.944	5.722	0.100	37.320
Fertility Rate (%)	2.785	1.462	0.721	7.829
Index	21.859	5.839	8.000	30.000

SD = Standard deviation

Index= Attitude Towards Women Index

equity index spanning 8 to 30 points, capturing diverse national contexts in our analysis.

4 Empirical Strategy

The analysis employs a two way fixed effects panel regression framework to estimate the relationship between maternity leave policies and FLP. The general empirical specification takes the form:

Model 1: Baseline Effects

$$Y_{it} = \alpha + \beta_1 \text{MLDuration}_{it} + \gamma \mathbf{X}_{it} + \delta_i + \theta_t + \varepsilon_{it} \quad (1)$$

Model 2: Payment Source Effects

$$Y_{it} = \alpha + \beta_2 \text{Paid}_{it} + \gamma \mathbf{X}_{it} + \delta_i + \theta_t + \varepsilon_{it} \quad (2)$$

Model 3: Interaction Model

$$Y_{it} = \alpha + \beta_1 \text{MLDuration}_{it} + \beta_2 \text{Paid}_{it} + \beta_3 (\text{MLDuration} \times \text{Paid})_{it} + \gamma \mathbf{X}_{it} + \delta_i + \theta_t + \varepsilon_{it} \quad (3)$$

where i and t denote countries and years, respectively. The dependent variable is female labor force participation is defined as share of women aged 15 and above who are a part of labor force. $MLDuration$ is maternity leave duration in weeks, $Paid$ is payment source variable.

To address unobserved heterogeneity, the specification includes country fixed effects, which control for time-invariant characteristics specific to each country, and year fixed effects, which account for global shocks or cyclical trends that may influence labor force participation across all countries over time.

The model further controls for several time-varying, country-specific factors that are likely to affect female labor force participation. These include the logarithm of GDP per capita as a proxy for the level of economic development, the share of parliamentary seats held by women as a measure of political representation, the national unemployment rate to capture overall labor market conditions, and an index measuring societal attitudes towards women. Together, these controls aim to isolate the effect of the primary explanatory variables on female labor force participation while accounting for both structural and cyclical influences.

The three models outlined above allow for a systematic examination of the relationship between maternity leave policies and female labor force participation. In Model 1, the baseline specification estimates the effect of maternity leave duration on FLP. The coefficient β_1 captures the average change in female labor force participation associated with a one-unit increase in the length of maternity leave, holding constant a set of covariates X_{it} , as well as unobserved country-specific factors (δ_i) and year-specific effects (θ_t).

Model 2 introduces the role of the payment source by including a dummy variable ($Paid_{it}$) that indicates whether maternity leave is financed by the government. The coefficient β_2 measures the differential effect on FLP when the leave is fully paid by the government, independent of the duration of the leave, while continuing to control for the same set of covariates and fixed effects as in the baseline model.

Model 3 incorporates an interaction term between maternity leave duration and the payment source, enabling the estimation of how the effect of leave duration on female labor force participa-

tion varies depending on who pays for the leave. In this model, β_1 represents the effect of maternity leave duration when the leave is not fully paid by government, β_2 captures the standalone effect of having a government funded maternity leave, and β_3 quantifies the additional effect of duration when the leave is fully paid by government .

Together, these specifications allow for a nuanced understanding of not only the independent effects of maternity leave duration and its payment structure on female labor force participation, but also how these dimensions interact in shaping labor market outcomes for women.

5 Results

5.1 Effects of Maternity Leave Policies on Female Labor Force Participation

Table 2 presents the regression estimates from the three model specifications outlined in the empirical strategy. Column (1) reports the baseline results examining the association between the duration of maternity leave and female labor force participation. The coefficient on *ML Duration* is positive but statistically insignificant, suggesting that the length of maternity leave alone does not have a direct effect on female labor force participation across countries when controlling for covariates and fixed effects.

Column (2) introduces a binary indicator for whether maternity leave is paid. The coefficient on *Paid* is 1.486 and statistically significant at the 1% level. This implies that, all else equal, countries that offer fully funded government maternity leave exhibit a 1.49 percentage point higher female labor force participation rate compared to those that do not. This indicates that countries that offer paid maternity leave exhibit significantly higher female labor force participation rates, highlighting the importance of the payment structure in shaping labor market outcomes for women.

Column (3) introduces an interaction term between leave duration and the payment indicator to examine how the effect of leave duration varies with the source of payment. The coefficient of *ML Duration* and interaction terms are insignificant suggesting duration of maternity leave does not have an effect on FLP irrespective of who is paying for the leave. However, the *Paid* vari-

Table 2: Effect of Maternity Leave Duration and Payment Structure on Female Labor Force Participation

	(1)	(2)	(3)
ML Duration	0.002		0.000
Paid		1.486***	1.345**
Paid × ML Duration			0.002
Fertility rate	0.070	0.109	0.101
Index	0.212***	0.223***	0.224***
Log GDP	-1.277***	-1.150***	-1.167***
Parliament share	0.012	0.010	0.011
Enrollment rate	0.055***	0.055***	0.055***
Unemployment rate	0.005	0.007	0.007
Constant	51.513***	49.317***	49.409***
Observations	1902	1902	1902
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.100	0.104	0.104

Notes: The dependent variable is Female Labor Force Participation Rate (FLP), defined as the share of women aged 15 and above participating in the labor force. ML Duration refers to the length of mandated maternity leave in weeks. Paid is a binary variable equal to 1 if maternity leave is fully funded by the government and 0 if costs are borne partially or fully by the employer. Index refers to the Attitude Towards Women Index ranging from 0 to 30, with higher values indicating greater gender equity. Log GDP is the natural logarithm of GDP per capita. Enrollment refers to tertiary school enrollment rate (%). Parliament Share refers to the share of national parliamentary seats held by women (%). All specifications also control for Fertility Rate and Unemployment Rate.

* p<0.10, ** p<0.05, *** p<0.01

able remains statistically significant and positive, confirming the finding from Regression 2. These results suggest that the institutional design of maternity benefits, particularly whether the government or employers bear the cost, has a more substantial effect on female labor force participation than the mere duration of leave. The findings highlight potential disincentives for employers to hire or retain women in environments where they bear the financial burden of maternity benefits.

Across all three models, the control variables behave largely as expected. The index measuring societal attitudes towards women (*Index*) is consistently positive and significant at the 1% level, indicating that more progressive social norms are associated with higher female labor force participation. The coefficient on *Log GDP* is negative and significant but contrasting. Educational enrollment (*Enrollment*) is positively and significantly associated with FLP across all specifications, while other controls such as *Fertility rate*, *Parliament share*, and *Unemployment rate* are not statistically significant in any model.

5.2 Country Group Heterogeneity in the Effect of Maternity Leave policies on Female Labor Force Participation

To examine whether the relationship between maternity leave duration and female labor force participation varies across countries at different stages of economic development, we categorized countries into four groups based on the World Bank's income classification: low-income, lower-middle-income, upper-middle-income, and high-income. We then estimated interaction models where the key explanatory variables maternity leave duration and payment status were interacted with income group dummies. This approach allows us to assess heterogeneity in the policy effects across different economic contexts.

While Table 2 indicated no statistically significant relationship between maternity leave duration and female labor force participation (FLFP) in the aggregate sample, Table 3 explores how this relationship varies across countries at different income levels. The results reveal important patterns of heterogeneity.

In *low-income countries*, maternity leave duration has a positive and statistically significant

Table 3: Income Group Heterogeneity in the Effect of Duration of Maternity Leave on Female Labor Force Participation

	FLP
ML Duration	0.006** (0.00)
Lower middle income \times Duration	0.027 (0.02)
Upper middle income \times Duration	-0.031** (0.01)
High income \times Duration	-0.015*** (0.00)
Constant	51.704*** (2.76)
Observations	1899
Adj. R-squared	0.108
Country FE	yes
Year FE	yes
Controls (Xt)	yes

Notes: The dependent variable is Female Labor Force Participation Rate (FLP), defined as the share of women aged 15 and above participating in the labor force. ML Duration refers to the length of mandated maternity leave in weeks. Income group classifications follow the World Bank 2025 income groupings. The baseline category is low-income countries. Interaction terms capture the differential effect of ML duration across income groups relative to low-income countries. All control variables are as defined in Table 2. Robust standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

effect on FLP. A one-week increase in the duration of maternity leave is associated with a 0.6 percentage point increase in female labor force participation, suggesting that extended leave policies may enable greater labor market outcome in these settings.

In *lower-middle-income countries*, the coefficient on the interaction term is positive but not statistically significant, indicating that the relationship between leave duration and FLP remains weak or inconclusive in this group.

By contrast, in *upper-middle-income* and *high-income countries*, the interaction terms are negative and statistically significant. This suggests that longer maternity leave durations may discourage labor force participation in more developed economies potentially due to greater opportunity costs for women, employer concerns about prolonged absences, or institutional factors that make re-entry into the workforce more challenging after extended leave.

Table 4 investigates how the effect of payment status on female labor force participation (FLFP) varies across income groups by interacting the “Paid” indicator with World Bank income classifications. This analysis allows us to assess whether the institutional design of maternity leave—specifically, whether the leave is fully paid by the government has differential impacts depending on a country’s level of economic development.

The results reveal that in upper-middle-income countries, the availability of a government funded maternity leave is associated with a 3.26 percentage point higher FLP than low income countries, and this effect is statistically significant at the 1% level. This suggests that in these economies, government-financed leave policies may encourage greater labor force outcome among women.

In contrast, the interaction terms for low-income, lower-middle-income, and high-income countries are not statistically significant, indicating that the presence of paid leave does not have a consistent or robust impact on FLFP in those contexts.

One possible explanation for why the positive effect of government-funded maternity leave is observed only in upper-middle-income countries is that these countries strike a balance between adequate policy infrastructure and a growing formal labor market. Government-financed leave

Table 4: Income Group Heterogeneity in the Effect of Paid Status

	FLP
Paid	0.370 (0.92)
Lower middle income \times Paid	-4.167 (3.62)
Upper middle income \times Paid	3.260*** (1.20)
High income \times Paid	-1.194 (1.41)
Constant	49.853*** (2.86)
Observations	1899
Adj. R-squared	0.111
Country FE	Yes
Year FE	Yes
Controls (Xt)	Yes

Notes: The dependent variable is Female Labor Force Participation Rate (FLP), defined as the share of women aged 15 and above participating in the labor force. Paid is a binary variable equal to 1 if maternity leave is fully funded by the government and 0 if costs are borne partially or fully by the employer. Income group classifications follow the World Bank 2025 income groupings. The baseline category is low-income countries. Interaction terms capture the differential effect of government funding across income groups relative to low-income countries. All control variables are as defined in Table 2. Robust standard errors in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

may meaningfully reduce barriers to female employment in these settings, especially by relieving employers of the cost burden and encouraging the retention of female workers. In contrast, in low and lower-middle-income countries, the reach and enforcement of such policies are limited by poor infrastructure and large share of informal labor force, while in high-income countries, the marginal benefit of additional support may be smaller due to already high participation rates and well-established labor protections.

while earlier results in Table 3 showed that longer maternity leave durations tend to reduce FLP in upper-middle-income countries, the findings from Table 4 suggest that the negative impact of leave duration may be mitigated when the leave is financed by the government rather than employers. This distinction highlights the importance of policy design: the funding source of maternity leave may shape its labor market effects, particularly in middle-income economies where women may face competing incentives and constraints.

5.3 Offsetting the Duration Effect: Role of Government Funding and Duration of ML across Income Groups

To further examine the heterogeneity in the effect of maternity leave policies, we introduce a three-way interaction between maternity leave duration, the payment source of leave (i.e., whether it is government-funded), and the income level of countries. This allows us to test whether government funding mitigates the potentially negative impact of long maternity leave on female labor force participation, particularly in upper-middle-income countries.

Table 5 presents the results from this specification. The key coefficient of interest is the interaction term Upper middle income \times Paid \times ML Duration, which is positive and statistically significant at the 1% level. Notably, the Upper middle income \times ML Duration interaction alone is negative and significant, implying that a one week increase in maternity leave in upper middle income countries when the cost of leave is not fully paid by the government generally associated with lower female labor force participation. In contrast, the three-way interaction becomes positive, indicating that when leave is publicly funded by government, the adverse effect of one week

Table 5: Interaction Effects of Income Level, Maternity Leave Duration, and Payment Source

	FLP
ML Duration	0.007 (0.01)
Paid	-0.046 (0.93)
Lower middle income × ML Duration	0.025 (0.02)
Upper middle income × ML Duration	-0.059*** (0.02)
High income × ML Duration	0.099 (0.07)
Lower middle income × Paid	-3.563 (3.63)
Upper middle income × Paid	-4.193 (2.58)
High income × Paid	8.909 (5.73)
Paid × ML Duration	-0.001 (0.01)
Upper middle income × Paid × ML Duration	0.074*** (0.02)
High income × Paid × ML Duration	-0.114* (0.07)
Constant	48.301*** (3.35)
P value	0.3822
Observations	1899
Adj. R-squared	0.122
Country FE	Yes
Year FE	Yes
Controls (Xt)	Yes

Notes: The dependent variable is Female Labor Force Participation Rate (FLP), defined as the share of women aged 15 and above participating in the labor force. ML Duration refers to the length of mandated maternity leave in weeks. Paid is a binary variable equal to 1 if maternity leave is fully funded by the government and 0 if costs are borne partially or fully by the employer. Income group classifications follow the World Bank 2025 income groupings. The baseline category is low-income countries. P-value corresponds to the test of whether the combined effect of Upper middle income × ML Duration and Upper middle income × Paid × ML Duration is statistically different from zero. All control variables are as defined in Table 2. Robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

increase in ML duration in upper middle income countries is reversed it becomes positive now (-.059+0.074= 0.015).

To further validate the mitigating role of government funding on the negative effect of longer maternity leave durations in upper middle income countries, we formally test whether the combined effect of the interaction between ML duration and income group, and the three-way interaction that includes public funding, is statistically different from zero. Specifically, we test the joint significance of the coefficients for Upper middle income \times ML Duration and Upper middle income \times Paid \times ML Duration using a linear restriction test. The results indicate that the sum of these two coefficients—representing the net effect of a one-week increase in maternity leave duration when it is publicly funded in upper middle income countries is not statistically different from zero ($F(1, 1711) = 0.76, p = 0.3822$). This suggests that while longer maternity leave durations in upper middle income countries are associated with a significant reduction in female labor force participation when not publicly funded, the inclusion of government payment offsets this negative effect, rendering the overall impact statistically indistinguishable from zero. The results demonstrate that in upper-middle-income countries, the negative labor market consequences of extended maternity leave durations only manifest when employers bear the costs. Government funding completely neutralizes these adverse effects (as confirmed by our combined effect test), with the point estimate suggesting a small positive net impact. This finding has important implications for policy design in developing economies seeking to balance support for working mothers with labor market efficiency.

This suggests that in upper-middle-income countries, government funding of maternity leave offsets the otherwise negative effect of longer leave durations on female labor force participation. For high-income countries, the three-way interaction High income \times Paid \times ML Duration is negative and weakly significant (10% level), possibly suggesting diminishing marginal benefits of paid leave in already well-resourced economies, or the presence of other institutional factors that mediate this relationship. The other interaction terms are not statistically significant, indicating that in low-income and lower-middle-income countries, the relationship between maternity leave and

labor force participation does not vary significantly with the source of funding or duration.

These results emphasize the importance of both the design and financing structure of maternity leave policies. Simply increasing the duration of leave may not enhance labor force participation unless supported by government funding particularly in upper middle income countries.

6 Robustness Checks and Endogeneity Concerns

While our analysis provides robust evidence on the relationship between maternity leave policies and female labor force participation (FLP), we acknowledge several endogeneity concerns that could affect the interpretation of our results. The most critical issue stems from potential reverse causality, countries with higher FLP may be more likely to adopt progressive maternity leave policies due to greater political demand for such measures. This simultaneity could lead to an overestimation of policy effects if not properly addressed. To test for reverse causality, we employ a rigorous specification using lagged policy variables. By examining whether past maternity leave policies predict current FLP while controlling for contemporaneous factors, we can assess the direction of causality. The results, presented in Appendix Table A1, show that the effects of lagged policy variables remain statistically significant and economically meaningful, with coefficients nearly identical to our baseline specifications. This persistence of effects strongly suggests that the causal relationship runs from policies to FLP rather than the reverse.

As an additional robustness check, we verify that our results are not sensitive to measurement decisions by employing an alternative definition of labor force participation. While this alternative specification (which expands the age range and includes informal sector workers) does not directly address endogeneity concerns, it provides important evidence that our core findings are not artifacts of particular operationalization choices. The consistency of results across these different measurement approaches, shown in Appendix Table A2, reinforces the reliability of our conclusions.

We acknowledge that these tests cannot fully eliminate all potential sources of endogeneity.

Unobserved time-varying factors, such as evolving social norms or economic conditions, might still influence both policy adoption and FLP trends. Our fixed effects framework absorbs time-invariant country heterogeneity, but we cannot rule out the possibility that omitted variables might bias our estimates.

The consistency of our results across specifications, including lagged policies and alternative FLP measures strengthens confidence in our core findings. However, we caution that causal interpretation requires careful consideration of these limitations.

7 Conclusion

This study investigates the impact of maternity leave policies on female labor force participation (FLP) across countries at varying income levels, with a particular focus on the interplay between maternity leave duration and payment structure. The findings reveal that the mere duration of maternity leave does not exert a statistically significant effect on FLP in the aggregate sample. However, the presence of government-funded paid leave emerges as a critical determinant, associated with a 1.49 percentage point increase in FLP. This underscores the importance of financial support in facilitating women's labor market attachment, independent of the length of leave provided.

The analysis uncovers significant heterogeneity in policy effects across income groups. In low-income countries, longer maternity leave durations exhibit a modest positive association with FLP, likely by enabling workforce re-entry. Conversely, in upper-middle-income countries, extended leave durations are linked to reduced FLP but only when the leave is not publicly funded. Government financing fully neutralizes this negative effect, suggesting that employer-borne costs may discourage the hiring and retention of women in these economies. In high-income countries, the benefits of paid leave appear to diminish, possibly due to the saturation of existing labor protections or institutional factors that mediate its impact.

These results highlight the pivotal role of policy design in shaping labor market outcomes for women. Simply extending maternity leave duration without addressing funding mechanisms

may inadvertently undermine FLP, particularly in middle-income contexts. The findings advocate for publicly financed maternity leave as a means to balance maternal support with labor market efficiency, especially in economies where employer costs could disincentivize female employment. The consistency of these results across specifications including lagged policies and alternative participation measures strengthens causal interpretation. However, we caution that unobserved factors (e.g., evolving gender norms) may still influence both policy adoption and outcomes.

Ultimately, this study contributes to the growing body of evidence that the efficacy of maternity leave policies hinges not on maternity leave duration alone, but on the broader institutional framework governing their implementation. Future research could explore how paternity leave policies, childcare facilities further moderate these relationships, offering additional insights for policymakers aiming to promote gender equity in the labor market.

References

- Banerjee, P., Biswas, S., & Mazumder, D. (2022). *Maternity leave and labour market outcomes* (SSRN Working Paper No. 4159552). SSRN. <https://ssrn.com/abstract=4159552>
- Baum, C. L. (2003). The effect of state maternity leave legislation and the 1993 Family and Medical Leave Act on employment and wages. *Labour Economics*, *10*(5), 573–596. [https://doi.org/10.1016/S0927-5371\(03\)00037-X](https://doi.org/10.1016/S0927-5371(03)00037-X)
- Corekcioglu, G., Francesconi, M., & Kunz, A. (2024). Expansions in paid parental leave and mothers' economic progress. *European Economic Review*, *169*, 104845. <https://doi.org/10.1016/j.euroecorev.2024.104845>
- Gupta, S. (2022). *Doing more harm than good? Labour market consequences of paid maternity leave extension in India* (George Washington University Department of Economics Working Paper).
- Schönberg, U., Ludsteck, J. (2014). Expansions in maternity leave coverage and mothers' labor

market outcomes after childbirth. *Journal of Labor Economics*, 32(3), 469–505.

<https://doi.org/10.1086/675078>

Timpe, B. (2024). The labor market impacts of America's first paid maternity leave policy.

Journal of Public Economics, 231, 105067. <https://doi.org/10.1016/j.jpubeco.2024.105067>

Tribin Uribe, A. M., Vargas, C. O., & Ramírez Bustamante, N. (2019). Unintended consequences of maternity leave legislation: The case of Colombia. *World Development*, 122, 218–232.

<https://doi.org/10.1016/j.worlddev.2019.05.017>

Aslim, E. G., Panovska, I., & Taşçı, M. A. (2021). Macroeconomic effects of maternity leave legislation in emerging economies. *Economic Modelling*, 100, 105497.

<https://doi.org/10.1016/j.econmod.2021.105497>

Chai, Y., Ríos-Salas, V., & Stek, P. (2022). Does enhancing paid maternity leave policy help promote gender equality? Evidence from 31 low- and middle-income countries. *Gender Issues*, 39(3), 335–367.

<https://doi.org/10.1007/s12147-021-09293-4>

Fallon, K. M., Mazar, A., & Swiss, L. (2017). The development benefits of maternity leave.

World Development, 95, 102–118. <https://doi.org/10.1016/j.worlddev.2017.03.001>

Bates, L., Hall, O., & Jakiela, P. (2023). *Understanding the impacts of paid maternity leave on women's labor market outcomes* (IZA Discussion Paper No. 16565). Institute of Labor Economics.

<https://www.iza.org/publications/dp/16565>

Lee, S.-T., & Jung, S.-M. (2024). The interactive effect of maternity leaves and child care enrollment on maternal employment. *Economic Analysis and Policy*, 84, 344–353.

<https://doi.org/10.1016/j.eap.2024.08.034>

Olivetti, C., & Petrongolo, B. (2017). The economic consequences of family policies: Lessons from a century of legislation in high-income countries. *Journal of Economic Perspectives*,

31(1), 205–230. <https://doi.org/10.1257/jep.31.1.205>

Appendix

Table A1: Lagged Regressors

	(1)	(2)	(3)
ML Duration _{t-1}	0.001		-0.002
Paid _{t-1}		1.376***	1.179*
Paid _{t-1} × ML Duration _{t-1}			0.003
fertility rate	0.098	0.136	0.130
Index	0.214***	0.223***	0.225***
log GDP	-1.259***	-1.166***	-1.161***
parliament share	0.015	0.013	0.013
enrollment rate	0.055***	0.055***	0.055***
unemployment rate	-0.006	-0.004	-0.004
Constant	51.136***	49.238***	49.305***
Observations	1848	1848	1848
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.094	0.098	0.097

Notes: The dependent variable is Female Labor Force Participation Rate (FLP), defined as the share of women aged 15 and above participating in the labor force. All policy variables are lagged by one period (t-1) to address reverse causality concerns. ML Duration_{t-1} refers to maternity leave duration in weeks lagged by one year. Paid_{t-1} is a binary variable equal to 1 if maternity leave is fully government funded, lagged by one year. All control variables remain contemporaneous and are as defined in Table 2.

* p<0.10, ** p<0.05, *** p<0.01

Table A2: Total Female Labor Force

	(1)	(2)	(3)
ML Duration	0.000 (0.00)		0.001 (0.00)
Paid		0.660*** (0.23)	0.695** (0.29)
Paid × ML Duration			-0.001 (0.00)
fertility rate	-0.844*** (0.13)	-0.828*** (0.13)	-0.827*** (0.13)
Index	0.051** (0.02)	0.056*** (0.02)	0.056*** (0.02)
log GDP	-1.145*** (0.14)	-1.093*** (0.14)	-1.098*** (0.14)
parliament share	0.003 (0.01)	0.003 (0.01)	0.003 (0.01)
enrollment rate	0.035*** (0.00)	0.035*** (0.00)	0.035*** (0.00)
unemployment rate	0.031*** (0.01)	0.032*** (0.01)	0.031*** (0.01)
Constant	48.889*** (1.25)	47.920*** (1.30)	47.918*** (1.30)
Observations	1902	1902	1902
Country FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.227	0.230	0.229

Notes: The dependent variable is Total Female Labor Force Participation Rate across all age groups, used as an alternative measure to the baseline FLP (ages 15 and above) to test robustness of results. ML Duration refers to the length of mandated maternity leave in weeks. Paid is a binary variable equal to 1 if maternity leave is fully funded by the government and 0 if costs are borne partially or fully by the employer. All other variable definitions, fixed effects, and sample remain identical to the baseline analysis in Table 2. Robust standard errors in parentheses.

* p<0.10, ** p<0.05, *** p<0.01

Table A3: Attitude Towards Women Index Components

Dimension	Binary Questions (Yes/No)
Mobility	<ul style="list-style-type: none"> • Can a woman choose where to live in the same way as a man? • Can a woman travel outside her home in the same way as a man? • Can a woman apply for a passport in the same way as a man? • Can a woman travel outside the country in the same way as a man?
Workplace	<ul style="list-style-type: none"> • Can a woman get a job in the same way as a man? • Does the law prohibit discrimination in employment based on gender? • Is there legislation on sexual harassment in employment? • Are there criminal penalties or civil remedies for sexual harassment?
Pay	<ul style="list-style-type: none"> • Does the law mandate equal remuneration for work of equal value? • Can a woman work at night in the same way as a man? • Can a woman work in dangerous jobs in the same way as a man? • Can a woman work in industrial jobs in the same way as a man?
Marriage	<ul style="list-style-type: none"> • Is the law free of provisions requiring a wife to obey her husband? • Can a woman be head of household in the same way as a man? • Is there legislation addressing domestic violence? • Can a woman obtain a divorce in the same way as a man? • Does a woman have the same remarriage rights as a man?
Entrepreneurship	<ul style="list-style-type: none"> • Can a woman sign a contract in the same way as a man? • Can a woman register a business in the same way as a man? • Can a woman open a bank account in the same way as a man? • Does the law prohibit discrimination in access to credit based on gender?

Continued on next page

Table A3 – continued from previous page

Dimension	Binary Questions (Yes/No)
Assets	<ul style="list-style-type: none">• Do women and men have equal property ownership rights?• Do sons and daughters have equal inheritance rights?• Do surviving spouses have equal inheritance rights?• Do spouses have equal administrative authority over marital assets?• Does the law value nonmonetary contributions in asset division?
Pension	<ul style="list-style-type: none">• Is the age at which women and men can retire with full pension benefits the same?• Is the partial pension retirement age the same for women and men?• Is the mandatory retirement age the same for women and men?• Are childcare absences accounted for in pension benefits?
