

Determinants of Female Labor Force Participation Rate: Evidence from Indonesia

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ABSTRACT

This study analyzes the determinants of the female labor force participation rate (FLPR) in Indonesia during the period 2018-2023 using a panel data approach and Fixed Effects model. The variables analyzed include the Gender Development Index (GDI), Provincial Minimum Wage (WAGE), fertility rate, women's involvement as formal labor, and women's representation in parliament. The results show that the GDI, WAGE, and women's involvement in formal labor contribute positively to the increase in FLPR. In contrast, high fertility rates and women's representation in parliament have a negative impact on women's participation in the labor market. These findings indicate that improving women's access to education, fairer wage policies, and better reproductive health services can increase women's involvement in the national economy. In addition, this study reveals that women's role in politics has not fully positively impacted their participation in the workforce, suggesting the need for more effective affirmative policies.

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INTRODUCTION

The participation of women in the labor market has become a central pillar of inclusive and sustainable economic growth worldwide. In the era of globalization and technological advancement, women's economic empowerment is no longer a marginal issue but a strategic necessity. Research by international organizations such as the World Bank and the International Monetary Fund (IMF) consistently highlights that increasing female labor force participation (FLFP) not only enhances household income and well-being but also contributes significantly to national GDP, productivity, and innovation. Countries with higher levels of gender equality in employment often experience more resilient economic development and greater social cohesion (Kabeer, 2020; Omran & Bilan, 2022; Figueroa-Hernández et al., 2023).

Despite these global trends, women's participation in the workforce remains uneven across regions, particularly in developing countries. In Indonesia, for example, gender disparities in labor market participation persist despite improvements in education and health access for women. According to Statistics Indonesia (BPS, 2024), the female labor force participation rate (FLPR) stood at only 54.52% in 2023, compared to 84.26% for men. This 29.74 percentage point gap reflects deep-rooted structural inequalities and underscores the persistent barriers that hinder women's full integration into the labor force.

The gap between male and female labor force participation in Indonesia is not merely a statistical discrepancy—it signifies broader issues related to gender norms, household responsibilities, unequal access to employment opportunities, and insufficient policy support. Many women, especially in rural and marginalized communities, are constrained by unpaid domestic work, childcare obligations, and limited access to affordable and reliable childcare services. In addition, traditional gender expectations often discourage women from pursuing full-time employment or leadership roles, further entrenching

gender inequality in the labor market (Cameron, 2023; Bangun, 2018).

Furthermore, women in Indonesia are disproportionately represented in the informal sector, where job security, income stability, and access to social protection are often lacking. Female informal workers are commonly employed as unpaid family laborers, micro-entrepreneurs, or seasonal workers – roles that are typically undervalued and underprotected. Meanwhile, in the formal sector, women still face significant obstacles such as wage discrimination, occupational segregation, limited career advancement opportunities, and underrepresentation in decision-making positions (McLaren et al., 2019; Miranti et al., 2022). These challenges collectively contribute to the stagnation of FLPR in Indonesia despite progress in gender development indicators.

Addressing the issue of low female labor force participation requires a comprehensive understanding of its underlying determinants. Previous studies have identified multiple factors influencing women's decisions to engage in the labor market, including educational attainment, fertility rates, marital status, wage levels, availability of childcare, and cultural norms (Blau & Kahn, 2017; Psacharopoulos & Tzannatos, 1989; Saha & Singh, 2024). However, in the Indonesian context, there remains a lack of research that simultaneously considers the interaction of these factors across provinces and over time. Moreover, empirical analysis that incorporates policy-related variables – such as minimum wages, gender development indices (GDI), and political representation – is still limited.

This study seeks to fill that research gap by investigating the determinants of female labor force participation in Indonesia using panel data covering 34 provinces from 2018 to 2023. The analysis includes key variables such as the Gender Development Index (GDI), provincial minimum wage (WAGE), fertility rate, women's involvement in formal employment, and women's representation in parliament. By employing a Fixed Effects Model (FEM), this study captures both temporal and regional dynamics affecting women's labor participation.

The rationale for focusing on Indonesia is threefold. First, as the fourth most populous country in the world, Indonesia's labor market dynamics significantly influence regional economic trends in Southeast Asia. Second, the country has shown significant improvements in women's education and health indicators, but these have not been matched by a proportional increase in labor participation, indicating a disconnect between human capital investment and labor market outcomes. Third, Indonesia is actively promoting gender mainstreaming and inclusive development under its Sustainable Development Goals (SDGs) framework, making it an ideal case study for assessing the effectiveness of gender-related economic policies.

The contribution of this study lies in its integrated approach to analyzing female labor force participation through the lens of socio-economic, demographic, and political variables. Unlike previous research that isolates individual factors, this study examines how different dimensions interact to shape women's labor market behavior. The findings aim to provide policymakers with evidence-based insights for designing more effective and inclusive labor policies. By addressing barriers such as wage inequality, fertility-related constraints, and limited access to formal employment, the study offers strategic recommendations to enhance women's economic engagement and promote gender equality in the workforce.

Ultimately, empowering women economically is not only a matter of social justice – it is also a driver of national development. Ensuring that women can participate fully in the labor market will strengthen Indonesia's economic resilience, reduce poverty, and contribute to broader development goals.

LITERATURE REVIEW

Understanding the determinants of female labor force participation (FLFP) requires a multidimensional approach grounded in economic, social, and gender theories. One of the foundational perspectives comes from Human Capital Theory, which posits that individuals invest in education, training, and health to increase their productivity and economic returns (Becker, 1964). From this viewpoint, women's labor force participation is closely associated with their level of education and skills. In contexts such as Indonesia, where women's access to education has improved over the years, human capital investment should theoretically lead to greater engagement in the formal labor market.

Alongside this, the classical labor supply and demand model provides an economic rationale for labor force participation decisions. On the supply side, factors such as wage rates, fertility, and household responsibilities influence women's availability and willingness to work. On the demand side, employer behavior, institutional structures, and wage policies shape job opportunities and conditions for women. For instance, a higher provincial minimum wage may encourage more women to seek employment if job availability and working conditions are favorable.

However, economic models alone cannot fully capture the complexity of women's labor decisions. Gender Role Theory and social norms offer a sociological perspective, emphasizing how traditional expectations often confine women to unpaid domestic work and caregiving responsibilities. In Indonesia, deeply rooted cultural values can limit women's labor market engagement despite educational qualifications, particularly when societal norms dictate that a woman's primary role is within the household. These gendered expectations often contribute to occupational segregation, the gender wage gap, and underrepresentation in leadership roles.

Fertility also plays a critical role in shaping women's employment patterns. Numerous studies have confirmed an inverse relationship between fertility rates and labor participation, particularly in contexts with limited family planning services and childcare infrastructure (Mishra & Smyth, 2010; Blau & Kahn, 2017). High fertility increases the time and energy women must dedicate to family care, thereby limiting their participation in the formal labor force. In Indonesia, early childbirth and high fertility rates remain challenges that constrain women's employment continuity and career development.

In the realm of governance and political inclusion, the concept of women's empowerment through political representation has received significant scholarly attention. It is often assumed that greater female representation in decision-making positions leads to policies that support women's rights, work-life balance, and equal opportunity. However, the Indonesian context reveals a paradox where higher political representation of women has not yet resulted in a proportional increase in labor participation, suggesting that structural or cultural barriers may still dominate over institutional presence.

Furthermore, the intersectionality framework enriches the analysis by acknowledging that women experience labor market inclusion or exclusion differently based on overlapping identities such as income level, education, geographic location, and ethnicity (Crenshaw, 1989). For example, women in rural or low-income communities often face compounded disadvantages compared to their urban, higher-income counterparts. This approach underscores the importance of disaggregated and context-specific analysis in policy formulation.

Together, these theoretical perspectives form a comprehensive foundation for analyzing the female labor force participation rate in Indonesia. They highlight the importance of considering not only economic incentives but also social, cultural, and institutional dynamics that influence women's decisions and opportunities to participate in the labor market. By integrating these frameworks, this study aims to provide a holistic understanding of the drivers behind FLFP and offer policy recommendations that are responsive to Indonesia's complex gender and labor realities.

RESEARCH METHODS

The variables in this study include gender, wages, fertility, and women's empowerment (women as formal workers and women's involvement in parliament), and the female labor force participation rate. Detailed data of the variables in this study are presented in Table 1.

Table 1. Research Variables

Indicator	Variables and Data	Measurement	Source
Gender Equality	Gender development index	Index	BPS
Wages	Logarithm of provincial minimum wage	Percent (%)	BPS
Fertility	Proportion of women giving birth to a live born child < 20 years old	Percent (%)	BPS
Women	Women as formal labor	Percent (%)	BPS
empowerment	Women's involvement in parliament	Percent (%)	BPS
Labor	Female labor force participation rate	Percent (%)	BPS

This research uses a quantitative approach by utilizing secondary data sourced from the Central Statistics Agency (BPS) for the period 2018-2023. The data analyzed is in the form of a panel, which is a combination of cross section and time series data. The cross section data covers 34 provinces in Indonesia, while the time series data covers the time span from 2018 to 2023. Thus, the total sample used in this study amounted to 204 observations

Based on Baltagi & Baltagi (2008), panel data regression can be estimated through three methods, namely Ordinary Least Square (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). Determination of the best model is done by Chow Test and Hausman Test. The econometric equation in this study is presented as follows:

$$FLPR_{it} = \alpha_0 + \alpha_1 GDI_{it} + \alpha_2 \text{Log}(WAGE)_{it} + \alpha_3 FERTILITY_{it} + \alpha_4 WFW_{it} + \alpha_5 WIP_{it} + e_{it}$$

Where:

FLPR	:	Female Labor Force Participation Rate (percent)
GDI	:	Gender Development Index
WAGE	:	Provincial Minimum Wage (percent)
FERTILITY	:	Proportion of women giving birth to live born children < 20 years old (percent)
WFW	:	Women as Formal Workers (percent)
WIP	:	Women's Involvement in Parliament (percent)
Log	:	Logarithms
α_0	:	Constant
$\alpha_1 \dots \alpha_5$:	Independent Variable Coefficient
e	:	Residuals
i	:	1-34 (cross section data)
t	:	1-6 (time series data)

RESULT

Table 2. Panel Data Regression Results
Dependent: Female Labor Force Participation Rate

Variables	Coefficient			
	(OLS)	(FE)	(RE)	(TEST)
GDI	0.338789*	1.170569*	0.716057***	
Log(WAGE)	-7.080352*	2.684091*	2.057743***	
FERTILITY	-0.542350	-15.47532*	-6.782207	
WFW	-0.004813	0.238508*	0.278656*	
WIP	-0.134486*	-0.110370*	-0.076197***	
Constant	94.54711	-83.97572	-41.88728	
R ²	0.3982	0.9677	0.1819	
Prob F-statistic	0.0000	0.0000	0.0000	
Chow Test				0.0000

Hausman Test	0.0047
Time Series	6
Cross Section	34
Sample	204

Source: EvIEWS 14, processed. Notes: (OLS) Ordinary Least Square; (FE) Fixed Effects; (RE) Random Effects; (TEST) Estimation and Data Test; *Significant at α 0.01; **Significant at α 0.05; ***Significant at α 0.1.

The panel data regression model estimation was conducted using three main methods, namely Ordinary Least Square (OLS), Fixed Effects (FE), and Random Effects (RE). Based on the test results, the Chow Test yields a probability of 0.000, which is smaller than the significance level α (0.05), so the model chosen is Fixed Effects (FE). Furthermore, the Hausman Test shows a probability of 0.0047, which is also smaller than α (0.05), so the FE model is confirmed as the most appropriate. The F-statistic test result with a probability of 0.000 shows that the independent variables simultaneously have a significant effect on the female labor force participation rate. In addition, the R^2 value of 0.9677 indicates that 96.77% of the variation in the female labor force participation rate can be explained by the independent variables in the model, while the remaining 3.23% is influenced by other factors outside the model.

Table 3. *t*-test results

Dependent: Female Labor Force Participation Rate			
Variables	Coefficient	Prob.	Conclusion
GDI	1.170569	0.0000	GDI has a positive effect
Log(WAGE)	2.684091	0.0053	Log(WAGE) has a positive effect
FERTILITY	-15.47532	0.0047	FERTILITY has a negative effect
WFW	0.238508	0.0000	WFW has a positive effect
WIP	-0.110370	0.0019	WIP has a negative effect

The *t*-test results in the Fixed Effects (FE) model show that the Gender Development Index (GDI) has a positive effect on FLPR with a coefficient of 1.170569 ($p=0.0000$), indicating that a one-unit increase in the GDI will increase the female labor force participation rate by 1.17%. Logarithm of Provincial Minimum Wage Log(WAGE) also has a positive effect with a coefficient of 2.684091 ($p=0.0053$), indicating that a 1% increase in minimum wage will increase the female labor force participation rate by 2.68%. In contrast, the proportion of women giving birth at a young age (FERTILITY) has a negative effect with a coefficient of -15.47532 ($p=0.0047$), indicating that a 1% increase in the proportion of women giving birth at a young age decreases the female labor force participation rate by 15.48%. Women as Formal Labor Force (WFW) has a positive influence on FLPR with a coefficient of 0.238508 ($p=0.0000$), which means that a 1% increase in women as formal labor force will increase the female labor force participation rate by 0.24%. However, women's involvement in parliament (WIP) has a negative influence on FLPR with a coefficient of -0.110370 ($p=0.0019$), which indicates that a 1% increase in women's involvement in parliament decreases the female labor force participation rate by 0.11%.

DISCUSSION

The findings of this study offer valuable insights into the complex and multifaceted determinants of female labor force participation (FLFP) in Indonesia. The positive relationship observed between the Gender Development Index (GDI) and FLFP reinforces the argument that improvements in women's access to education, healthcare, and economic opportunities lead to higher participation in the labor market. This result supports the conclusions drawn by Klasen et al. (2021), who argue that multidimensional progress in gender development significantly enhances women's capacity and willingness to engage in paid employment. Similarly, González and Virdis (2022) emphasize that inclusive human development outcomes are among the most reliable predictors of gender-equal labor market outcomes.

The provincial minimum wage also shows a significant positive effect on women's labor force participation. This aligns with the findings of Al Faizah et al. (2020) and Firmansyah & Purnomo (2024), who assert that higher and more equitable wages serve as strong economic incentives for women to enter or remain in the workforce. From a policy perspective, this suggests that increasing regional wage standards—particularly in sectors where women are heavily represented—could stimulate broader female employment. Moreover, studies in other Southeast Asian countries, such as those by Bhalotra & Fernández (2024), demonstrate that wage policy reforms are most effective when accompanied by labor rights protection and access to formal employment.

In contrast, the negative association between fertility rates and FLFP in this study supports longstanding international findings regarding the work-family trade-off. The inverse relationship, as previously discussed by Mishra & Smyth (2010) and Psacharopoulos & Tzannatos (1989), is often attributed to childcare burdens, insufficient support infrastructure, and limited access to family planning services. In the Indonesian context, this dynamic is compounded by traditional gender roles that designate women as primary caregivers. Miranti et al. (2022) highlight that the lack of affordable childcare services and insufficient maternity protections make it difficult for women, especially those with young children, to sustain employment. Therefore, comprehensive reproductive health and parental support policies are essential to alleviate fertility-related constraints on female labor participation.

Women's representation in parliament, surprisingly, showed a negative correlation with FLFP. While this may seem counterintuitive, it reflects a more nuanced reality. Stockemer & Byrne (2012) and Iregui-Bohórquez et al. (2024) argue that political representation alone is insufficient if not accompanied by institutional and structural reforms that enable women to translate political visibility into broader labor empowerment. In Indonesia, female politicians may face role strain due to competing professional and domestic obligations, especially in the absence of supportive public infrastructure such as flexible work arrangements or family-friendly policies. Additionally, the quality and agenda of representation matter; the presence of women in legislative positions does not automatically guarantee that labor or gender equality issues are prioritized in policymaking.

Another noteworthy result is the positive impact of formal sector participation among women on overall FLFP. This confirms findings by Assaad et al. (2020), who show that formal employment not only offers income stability and legal protections but also reinforces long-term attachment to the labor force. In Indonesia, efforts to formalize female-dominated sectors—such as small-scale retail, services, and domestic work—could meaningfully improve women's economic security and job retention. Backhaus & Loichinger (2022) further emphasize that formal labor integration increases women's access to social safety nets, which in turn enhances economic resilience at the household and community levels.

These findings collectively support a multidimensional policy approach. Gender development efforts must be coupled with labor market reforms that address both supply-side (e.g., education, childcare, reproductive health) and demand-side (e.g., wage equity, formalization, anti-discrimination) factors. Addressing FLFP disparities requires a concerted, cross-sectoral strategy involving ministries of labor, education, health, and women's empowerment, as well as private sector and civil society collaboration.

In summary, this study affirms that gender development, wage policies, and formal employment opportunities are significant enablers of female labor force participation in Indonesia, while high fertility and limited policy support for work-life balance remain barriers. The results underscore the importance of integrated strategies that address both structural and cultural determinants. Strengthening education and health services for women, promoting wage fairness, supporting formal employment, and expanding access to family planning and childcare are key steps toward narrowing the gender gap in Indonesia's labor market. Future efforts must also ensure that women's political representation is translated into substantive labor and gender equity reforms.

CONCLUSION

This study analyzes the determinants of the female labor force participation rate (FLPR) in Indonesia during the period 2018-2023 using panel data and the Fixed Effects Model (FEM) approach. The

results show that gender equality, women's involvement in the formal sector, and equal pay policies have a positive influence on increasing women's participation in the workforce. In contrast, women's involvement in politics and high fertility rates have a negative impact on FLPR. These findings have important implications for labor policy and economic development in Indonesia. Improving access to education and health services for women, especially in rural areas, is a strategic step in supporting women's involvement in the formal sector. In addition, fair and inclusive wage policies can be a key instrument in encouraging women's participation in the labor market. Family planning policy reforms and improved access to reproductive health services are also needed to overcome constraints to women's participation due to high fertility rates.

While this study provides valuable insights, there are some limitations that need to be noted. The use of panel data over six years (2018-2023) provides a good understanding of short-term trends, but does not fully capture the longer dynamics of structural change. In addition, this study has not considered digitalization and work flexibility as variables that could potentially affect women's participation in the workforce. For future research, it is suggested that further exploration be conducted regarding the impact of digitalization and work flexibility on women's workforce participation. Longitudinal analysis with a longer time period is also needed to understand the broader impact of policies on trends in female labor force participation in Indonesia. With a more comprehensive and evidence-based approach, more effective policies can be designed to sustainably strengthen the role of women in the national economy.

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