Volume 14 No 1 (2025)
JURNAL EKONOMI PEMBANGUNAN (JEP)
Journal of Economic Development
http://jurnal.feb.unila.ac.id/index.php/jep
ISSN Print: 2302-9595 | ISSN Online: 2721-6071

Economic and Health Dimension of Female Labor Force Participation in Indonesia

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Abstract
Women and employment are a problem faced by both developed and developing countries. The view that women should work in the domestic sphere places women as weak and disadvantaged in society. This study aims to analyze and determine the role of the dimensions of economic and health in the female labor force participation during the 2017-2021 period in 34 provinces in Indonesia. Economic indicators are seen from female wages and female education. Meanwhile, health indicators are seen in female-headed households, fertility rate, and young women's marriage. The data used is secondary data obtained from BPS and BKKBN. This study uses panel data analysis with the Fixed Effect Model (FEM). The study results show that the indicators in the economic dimension that have a significant relationship to the female labor force participation are female wages and female education. Then, an indicator in health that has a significant relationship is young married women. Education emerges as a key finding in this study, thereby positioning the expansion of women's access to education as a central focus in efforts to enhance female labor force participation (FLFP), such us collaboration of the government, companies, and educational institutions to provide training and improve the curriculum in accordance with work needs.
Keywords: *Dimension, Economic, Female Labor Force Participation, Health, Indonesia*

Abstrak
Masalah perempuan dan ketenagakerjaan merupakan permasalahan yang dihadapi oleh negara maju maupun negara berkembang. Pandangan bahwa perempuan sebaiknya bekerja pada ranah domestik menempatkan perempuan sebagai masyarakat lemah dan tertinggal. Penelitian ini bertujuan untuk menganalisis dan mengetahui peran dimensi ekonomi dan kesehatan terhadap tingkat partisipasi angkatan kerja selama periode 2017-2021 di 34 provinsi di Indonesia. Indikator ekonomi dilihat dari upah perempuan dan pendidikan perempuan. Sementara, indikator kesehatan dilihat dari perempuan kepala rumah tangga, fertilitas, dan pernikahan dini remaja putri. Data yang digunakan adalah data sekunder yang diperoleh dari BPS dan BKKBN. Penelitian ini menggunakan analisis data panel dengan model Fixed Effect Model (FEM). Hasil penelitian menunjukkan bahwa indikator dalam dimensi ekonomi yang memiliki hubungan signifikan terhadap tingkat partisipasi angkatan kerja perempuan adalah upah perempuan dan pendidikan perempuan. Kemudian, indikator dalam kesehatan yang memiliki hubungan signifikan terhadap tingkat partisipasi angkatan kerja perempuan adalah pernikahan dini remaja putri. Pendidikan menjadi

temuan kunci dalam penelitian ini, sehingga peningkatan pada akses pendidikan perempuan menjadi fokus utama dalam upaya peningkatan TPAK perempuan seperti kolaborasi pemerintah, perusahaan, dan lembaga pendidikan untuk memberikan pelatihan dan memperbaiki kurikulum sesuai dengan kebutuhan pasar tenaga kerja.
Kata Kunci: *Dimensi, Ekonomi, Partisipasi Tenaga Kerja Perempuan, Kesehatan, Indonesia*

INTRODUCTION

Through the Sustainable Development Goals (SDGs), 193 countries have committed to achieving a sustainable future for the next generations. Nevertheless, despite the integrative framework of the 17 SDGs targets, gender-based discrimination remains structurally entrenched across various domains. While progress has been made in promoting gender equality and empowerment, data have shown that women and girls still face discrimination and difficulty in accessing justice to resources, engaging in decision-making and also contributing to social and economic (UN Women, 2018). The principle of "leaving no one behind" in the Sustainable Development Goals (SDGs) has emphasized the importance of involving women in all areas of development. Gender equality is not only a matter of justice but also important in ensuring fair and sustainable economic growth. To see the extent of progress in gender equality, it is usually measured from several main aspects, namely access to education, women's representation in politics, health, and participation in the world of work. These indicators provide a comprehensive picture of gender inequality and also show the obstacles that women still face in various countries. The United Nations Development Programme (UNDP) has summarized various indicators in the Gender Inequality Index (GII) as a measuring tool that shows how large the gender gap is in human development. This GII has helped to see the existing patterns of inequality and its impact on social and economic development, both at the national and global levels.

This classical economist in the period 1729-1790 has believed that human resources or human capital is the most important factor in encouraging growth and progress of the country. Therefore, the workforce, which is part of human capital, has a very large role in determining how productive a country is and how it is developed. As such, Hosney (2016), stated that ensuring women have equal access to the labor market should not be viewed through an equity lens but rather as a strategic imperative for tapping into a country's human capital potential and achieving sustained economic progress. In line with this perspective, Goals 5 and 8 of the 17 Sustainable Development Goals (SDGs) that specifically enunciate gender equality along with general access to decent employment inclusively emphasizing women's participation in the labor market (Nhamo et al., 2018). Discussion about women and labor force participation should not be delinked with the wider socio-cultural and religious contexts that constrain women's economic roles. Labor market participation for females is very much connected with human capital orientation among women. As noted by Septiawan & Wijaya (2019), The relatively low quality of women's human capital contributes to their limited competitiveness in the labor market, which in turn reinforces structural inequalities and constrains their contribution to national economic development.

In this context, Indonesia presents a significant case. As a country with a large population, reaching 272.68 million as of September 2021, of which women constitute approximately 49.5%, Indonesia holds substantial potential in terms of labor force supply. This potential is further amplified by the country's current demographic dividend period, characterized by a greater proportion of the population being of working age compared to children and the elderly. However, the sheer number of individuals within the working-age population does not automatically

translate into an economically active labor force. A considerable share of working-age individuals, particularly women, remain outside the labor market due to various structural and socio-cultural barriers. Therefore, to capture the actual level of economic engagement, the labor force participation rate (LFPR) is commonly used. This indicator reflects the proportion of the working-age population that is either employed or actively seeking employment, providing a more accurate measure of the human capital actively contributing to economic productivity.

The development of female labor force participation in Indonesia, as recorded by the World Bank (2021), shows a lag compared to other Southeast Asian countries. This is despite Indonesia having a larger female population quantitatively than its regional counterparts. Furthermore, national data from BPS (2021) indicates a persistent gender gap in the labor force, with female participation rates remaining stagnant at around 50 percent. The continued gender disparity and stagnation in female labor force participation amid Indonesia's substantial demographic potential demonstrate the suboptimal utilization of the country's human capital.

The low female labor force participation is closely linked to gender-based constraints that limit women's opportunities. Therefore, empowering women is essential to fostering individuals who are independent and competitive. Economic and health constitute critical factors influencing women's decisions to participate in the labor force (Al Faziah et al., 2020). Empowerment of women in the economic dimension encourages them to gain control, have their voices heard, shape perspectives, and influence decisions, thereby enabling women to be recognized and respected as equal human beings (Mahbub, 2021). Furthermore, in addition to the economic dimension, health quality, as explained in human capital theory, is a crucial indicator for enhancing human productivity, which in turn drives economic development and growth (Todaro & Smith, 2011). Improvements in women's health can lead to increased FLFP (Osundina, 2020).

Within the framework of labor supply theory, wages assume a pivotal role in determining women's decision to engage in the labor market (Borjas, 2016). FLFP is determined by a 'rationally economic' assessment of the relative merits of their engagement in paid employment as compared to non-market activities such as domestic work and childcare. This decision is significantly influenced by the prevailing wage levels within the labor market. Greater wage levels have been found to create more economic incentive to work, leading to a greater chance that women are drawn into the labor force. In addition to wages, human capital theory by Becker (1993) emphasizes the importance of education for women and employment and argues that the higher the level of education, the greater the likelihood that women will enter into labor market. Additionally, the status of women within the household has been demonstrated to have a substantial impact on labor force participation. Women who occupy the role of head of the household typically allocate the majority of their time to work. In general, the financial responsibilities borne by female heads of households are greater than those of their male)counterparts. This greater financial responsibility is associated with a higher probability of female heads of households participating in the labor market (Nwosu & Ndinda, 2018).

Additionally, fertility rate must be considered as a crucial factor. A significant study has discovered a relationship between FLFP and fertility rate (Debnath & Das, 2022; Lv & Yang, 2018a; Siah & Lee, 2015).This phenomenon is explained by two distinct theories: the role incompatibility hypothesis and the societal response hypothesis (Dixon-Mueller & Germain, 1994). The role incompatibility hypothesis suggests that there is an inverse relationship between fertility rate and FLFP. The societal response hypothesis shows that there is a positive relationship between

fertility rate and FLFP. Furthermore, marital status, particularly in regard to early marriage, is a salient factor that exerts influence on FLFP. In their research, Al Faizah et al. (2020) discovered a substantial negative correlation between young married women and FLFP. Early marriage is associated with numerous challenges, including educational, health, and employment disparities.

Research by Septiawan & Wijaya (2019) Explains that women's participation in the labor force is influenced by economic, social, and cultural factors. Men's participation in the labor market is often driven by societal perceptions that regard men as the primary breadwinners. Conversely, women's labor force involvement is frequently shaped by household-related factors. Societal stereotypes tend to confine women to the domestic sphere, as their participation in the labor market is often perceived as potentially disrupting household harmony.

Several studies have investigated the factors influencing FLFP. Tsaniyah & Sugiharti (2021) analyzed determinants of FLFP in East Java, using age, education, marital status, head of household status, household size, location, and income as predictors. Their findings indicate that age, higher education (university level), and divorced marital status positively affect FLFP, whereas lower education (junior high school level), widowed marital status, household size, location, and income negatively impact female labor participation. Similarly, Ardella et al. (2019) Examined regional GDP growth, education level, and minimum wage as predictors, finding that higher wages negatively influence FLFP. Lv & Yang (2018) Further incorporated fertility rates, political participation, and urbanization, concluding that political participation and urbanization increase FLFP, while higher fertility rates reduce it. A study by Marjanović et al., (2024) found that GDP per capita, total fertility rate, retirement age, annual net income, and education all have a positive influence on FLFP.

Many previous studies tend to include factors associated with men, which can introduce bias in determining the true drivers of female labor force participation. Consequently, this research limits its scope to variables exclusively related to women, aiming to identify key determinants of female labor force participation in Indonesia through the lenses of empowerment and health. Indicators such as female wages, educational attainment, and female-headed households are employed to capture the economic dimension. Meanwhile, fertility rates and young women married are used as proxies for the health dimension.

This study aims to examine whether there is a significant relationship between female wages, education, female-headed households, fertility rate, and young married women with female labor force participation (FLFP) in Indonesia, both partially and simultaneously. The study is crucial because understanding the factors that influence women's decisions to participate in the labor force can contribute to sustainable growth and development. It also provides insights into potential strategies to enhance female involvement in development, particularly in the workforce. Furthermore, this research can serve as a valuable reference for future studies on related topics.

METHODOLOGY

This study employs quantitative analysis to investigate the determinants of female labor force participation (FLFP) in Indonesia. The data utilized are secondary data obtained from the Badan Pusat Statistik (BPS) and the Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN). Given the use of secondary data, literature review, and documentation are the appropriate data collection methods for this research. The quantitative analysis method applied is a panel data regression model using Eviews-12 as the analytical software, comprising time series data from

2017 to 2021 and cross-sectional data across 34 provinces in Indonesia. The advantages of using panel data include increased econometric estimation efficiency, larger and more comprehensive datasets that provide richer information, greater variable variation, and reduced multicollinearity. To determine the most appropriate panel data regression model, the Chow and Hausman tests were used. Additionally, a classical assumption test was conducted to validate the model, including testing for normality, multicollinearity, heteroscedasticity, and autocorrelation. These results are expected to confirm that the model meets the requirements of a best linear unbiased estimator (BLUE), allowing for reliable interpretation of the estimation results. The basic model used in this study is as follows:

$$FLFP = f(FWg, FEDU, FHH, FER, YMW)$$

The regression equation formulated in this panel data analysis is presented as follows:

$$FLFP_{it} = \alpha + \beta_1 FWg_{it} + \beta_2 FEDU_{it} + \beta_3 FHH_{it} + \beta_4 FER_{it} + \beta_5 YMW_{it} + \varepsilon_i$$

Notes:

FLFPR	: Female Labor Force Participation (percent)
FWg	: Female Wage (percent)
FEDU	: Female Education (year)
FHH	: Female Headed Households (percent)
FER	: Fertility Rate (people)
YMW	: Young Married Women (percent)
i	: Province
t	: *Year.*
β	: Coefficient
α	: Constanta
ε_i	: Error Term

The dependent variable in this study is the female labor force participation (FLFP). FLFP in this study is proxied by female labor force participation rate, which is defined as the percentage of working-age women (aged 15–64) who are part of the labor force relative to the total female working-age population (aged 15–64). The labor force includes individuals who are employed or actively seeking employment, including the unemployed. FLFP reflects the available labor supply contributing to the production of goods and services within the economy. The independent variables used in this study include female wages and female education, which serve as indicators of the economic dimension. Female wages are proxied by an increase average monthly wages received by women. Female education is measured by the female mean years of schooling. Additionally, female-headed households, fertility rate, and early-age marriage among young women are used as indicators representing the health dimension, because these variables can affect women's physical and mental health. In this study, female-headed households are proxied by the proportion of women who serve as heads of households, while fertility is proxied by the total fertility rate, and young married women are measured by the proportion of the population aged 20–24 who were married or cohabiting before the age of 18. The selection of these indicators is supported by previous empirical studies (Al Faziah et al., 2020; Narayan et al., 2021; Pratomo, 2017; Septiawan & Wijaya, 2019; Siah & Lee, 2015; Tsaniyah & Sugiharti, 2021).

DISCUSSION AND FINDINGS

The results of this study are derived from panel data analysis, based on data from 34 provinces in Indonesia for the period 2017–2020. The main regression results are presented in Table 1. Before conducting the model selection test, a classical assumption test was carried out. The results show that the model used met the requirements and is free of normality, multicollinearity, heteroscedasticity, and autocorrelation problems (see Appendix). The best-fitting model selected for this study is the Fixed Effect Model. The findings indicate that female education has a positive and statistically significant effect on FLFP. In contrast, female wages and young married women have a negative and statistically significant effect on FLFP. Meanwhile, female-headed households and fertility are found to have no statistically significant effect, however, the positive direction is likely to increase FLFP. According to column (2), the Fixed Effect Model estimator yields an adjusted R-squared value of 0.936679, indicating that approximately 94% of the variation in the dependent variable is explained by the independent variables included in the model, while the remaining 6% is explained by other factors not captured in this study. The probability of the F-statistic is 0.000000, which is less than 0.05, suggesting that the independent variables collectively have a statistically significant relationship with the dependent variable.

Table 1
Estimation Result

Variable	Female Labor Force Participation			
	CEM	FEM	REM	
C	91.67286 (0,0000)	30.03709 (0.0002)	55,33502 (0,0000)	
Female Wages	**-0,176138**** **(0,0053)**	**-0.053962**** **(0.0114)**	**-0,077859**** **(0,0002)**	
Female Education	**-4,022480*** **(0,0000)**	**2.590650**** **(0.0013)**	-0,165419 (0,7866)	
Female Headed-Houshold	0,032813 (0,7846)	0.120126 (0.4959)	0,092145 (0,5228)	
Fertility	0,197112 (0,8802)	1.043500 (0.2416)	0,755939 (0,3762)	
Young Married Women	**-0,593732*** **(0,0000)**	**-0.240376**** **(0.0181)**	**-0,382601*** **(0,0000)**	
R^2	0,351983	0.950917	0,178929	
Adj R^2	0,332226	0.936679	0,153896	
F-Statistic	17,81593	66.78746	7,147814	
Prob(F-Statistic)	0,000000	0.000000	0,000004	
Probability Chow Test				0.0000
Probability Hausman Test				0.0000

To evaluate the individual influence of each independent variable, a partial significance test (t-test) was used. Based on the comparison between the probability values and the 5% significance threshold, the results indicate that, from the economic dimension, female wages and female education exert a statistically significant partial effect on FLFP. From the health dimension, young married women is identified as the only variable with a statistically significant impact on FLFP.

The Effect on Female Wages in Female Labor Force Participation (FLFP)

Based on the conducted analysis, female wages exhibit a negative and statistically significant relationship with FLFP. The coefficient of -0.053962 indicates that a 1 percent increase in the

average female wage is associated with a 5 percent decrease in FLFP. This result aligns with the neoclassical economic perspective, which suggests that wage levels have a significant role in shaping women's decisions to participate in the labor market (Borjas, 2016). Similar conclusions have been drawn in earlier studies by Ardella et al., (2019) and Pratomo (2017) both of which reported a negative impact of wages on female labor participation.

Within the framework of production cost theory, firms typically make decisions about how much labor to employ by weighing cost efficiency. This decision is guided by the principle of achieving equilibrium between the wages paid and the value of the marginal product of labor (VMP) (Mankiw, 2021). In situations where increases in female wages are not accompanied by proportional increases in VMP, from the business perspective, the allocation of female labor becomes economically inefficient. In many cases, female are still frequently subject to stereotypes that portray them as having constraints in terms of working hours, mobility, and long-term career commitment, often due to expectations around domestic roles. These perceptions don't arise in a vacuum; they are consistently reinforced by structural norms in the labor market, which continues to equate the "ideal worker" with traits typically associated with men (Akerlof & Kranton, 2000; Blau & Kahn, 2017). Research by Laili & Damayanti (2019) also shows that female employees generally show lower productivity levels compared to their male peers. Thus, by employing the total cost function framework, an increase in wages raises input costs, thereby driving a reduction in labor demand. Consequently, wage increases may lead to a decrease in female labor absorption, as reflected in the declining FLFP.

On the other hand, the labor demand structure is not entirely gender-neutral. Studies by Azwar (2023) indicate that discriminatory preferences persist in recruitment and promotion processes. Although aggregate data show a statistically significant decline in the gender wage gap, micro-level studies reveal that women often encounter a "glass ceiling" and face barriers in accessing training or career advancement opportunities. In many cases, firms' preference for workers with "full-time commitment" or "high mobility" implicitly discriminates against women burdened with domestic responsibilities. This high qualification requirement and gender segregation contribute to a discouragement effect among female labor force participants, ultimately leading them to opt out of the labor force. This negative finding suggests the need for labor market reforms, particularly on the demand side, such as a wage system that does not burden companies yet still attracts women to the labor market. Moreover, it is vital to hire employees in the formal sector in an inclusive manner without discrimination on the grounds of gender so that women are not perceived as mere secondary choices to men, particularly when wages increase.

The Effect of Education on Female Labor Force Participation (FLFP)

The empirical findings show that female education, measured by the mean years of schooling, has a statistically significant positive impact on female labor force participation. The coefficient of 2.590650 indicates that a year increase in the mean year of schooling is associated with a 259 percent increase in FLFP. This result is align with Becker's human capital theory (1993), which argues that higher education levels improve an individual's productivity and, as a result, boost their chances of participating in the labor market. Women with a high level of education usually have more skills and knowledge so that they are more comprehensive. In addition, the higher the education they have, the greater their time, so they prefer to focus on work rather than taking care of household chores. The results of this study are in line with previous research (Al Faziah et al., 2020; Ardella et al., 2019; Harijadi, 2020; Hosney, 2016; Onyeke & Ukwueze, 2022; Puspasari & Handayani, 2020; Septiawan & Wijaya, 2019).

Sen (1999) emphasizing the importance of education in expanding a person's ability and freedom in making his life choices. This education will help women in carrying out their roles both at home and in the community, thereby reducing social and cultural barriers that prevent them from participating in the world of work. In this case, education is not only a tool to earn income but also as a way to change in social life and increase personal independence. This education has a very important role in changing the consideration between having a job or not working.

Women with higher levels of education tend to have greater expectations of future earnings; hence, the increase in potential income raises the opportunity cost of not engaging in the labor market (Yeni et al., 2022). As a result, there is a positive correlation between female mean years of schooling and their probability of participating in the formal labor force, reflecting the human capital mechanism in enhancing FLFP. The large influence of education suggests that policies related to the employment of women should prioritize education on women's issues. Among these policies are enhancement of skill acquisition training, improvement of vocational education to match the labor market demand, and adapting the education curriculum to be more responsive to the world of work. There is need for collaboration among government, educational institutions, and industries so that women are trained not only in technical skills, but also in soft skills, digital literacy, and entrepreneurship.

The Effect of Female-Headed Households on Female Labor Force Participation (FLFP)

Based on the analysis, female-headed household shows a positive but statistically insignificant relationship with FLFPR. The coefficient of 0.120126 indicates that an increase in 1 percent female headed household has the potential to increase 12 percent in FLFP but this finding does not provide significant results. This result is consistent with the findings of (Kiani, 2021; Tsaniyah & Sugiharti, 2021). The insignificance of the variable is explained by Kiani (2021) who argues that developing countries are still dominated by traditional societal attitudes toward women working. In addition, Indonesia's data collection system does not adequately capture the employment status of female household heads, whether in the formal or informal sectors. The report on the Empowerment of Women Heads of Families, called PEKKA, states that actually the number of women who have become heads of households and work is more than the data recorded, therefore many households are still officially dictated and led by men. This condition makes it difficult for women to access government empowerment programs or social assistance. This situation indicates that the low contribution of women in households in labor force participation statistics is not only due to their limitations in the world of work but also due to fundamental problems in the data recording system and unequal access to social and economic resources. The lack of public policy attention to women heads of households will worsen their position in society and the economy and this will reduce their chances and will participate in the labor force. Therefore, the system for recording and collecting data on women as heads of households must be updated regularly to accurately reflect real conditions. Updating this data is important in order to formulate policies that truly respond to the needs of women in the household and economic sectors.

This phenomenon can be seen from an economic perspective carried out in previous research, namely Beneria et al. (2016),It is highlighted that women's work, especially in the informal sector and domestic work, is often considered trivial and not taken into account in the conventional economy, even though the role of women is also very important in maintaining the economic stability of the family, especially for underprivileged households.

Furthermore, the low education levels of female household heads contribute to their limited participation in the labor force. The Ministry of Women Empowerment and Child Protection recorded that approximately 40.42 percent of female household heads do not possess formal educational certificates (Kementrian Pemberdayaan Perempuan dan Perlindungan Anak, 2020). Nevertheless, the positive direction indicated in the estimation results suggests that female-headed households have the potential to contribute to increased FLFP. This can be attributed to the economic burden borne by women as primary income earners, which compels them to engage more actively in the labor market to fulfill household needs.

The Effect of Fertility rate on Female Labor Force Participation (FLFP)

The analysis shows a positive but statistically insignificant relationship between fertility and female labor force participation, it can be concluded that this study does not support the role incompatibility hypothesis and societal response hypothesis. This result is consistent with the studies of Altuzarra et al. (2019), Harsoyo & Sulistyaningrum (2018), Siah & Lee (2015) found an insignificant relationship between fertility rate and FLFP. Theoretically, fertility rate can influence women's labor market decisions through increased domestic workload and child-rearing responsibilities. However, in the Indonesian context, relatively high fertility rates in certain regions do not necessarily deter women from engaging in economic activities. In many cases, women continue to participate in the labor force due to household financial needs or their multiple roles as supplementary income earners. Shifting cultural views on 'working women' and the prevalence of childcare in Indonesia lead to an insignificant relationship between fertility rate and FLFP. The insignificant effect of fertility on FLFP suggests that having children is neither a strong barrier nor a decisive motivator for women's participation in the labor market. Other factors, such as prevailing social norms, access to education, availability of childcare services, household characteristics, and spousal support, tend to hold a more dominant role in shaping women's labor force participation.

The Effect of Young Married Women on Female Labor Force Participation Rate (FLFPR)

Based on the conducted analysis, there is a significant and negative relationship between young married women and FLFP. The coefficient of -0.240376 indicates that a one percent decrease in the proportion of females marrying early can lead to a 24 percent increase in female labor force participation. This study supports Becker (1973) specialization theory, which posits that women tend to have a comparative advantage in domestic work rather than labor market activities. The result is consistent with studies by Al Faziah et al. (2020, 2022). The observed negative association is fundamentally caused by the impediment to continuing education and economic participation post-marriage. According to the *Child Marriage Report* by UNICEF (2021) only 5.57 percent of girls who marry before 18 continue their education, while 93.60 percent drop out of school. Young married women tend to cease formal education prematurely. Education level is a key determinant of labor market participation decisions. Low educational attainment limits access to medium and high-skilled jobs and narrows employment opportunities in the formal sector.

Moreover, early-age marriage poses significant health risks for women. Getting married during adolescence, especially before the age of 19, often results in early pregnancies that carry serious health risks. The WHO (2024) It indicates that pregnancy in adolescence is often associated with health risks such as preeclampsia, premature birth, and high maternal and infant mortality rates. Teenage girls who have experienced pregnancy or have to take care of a child from a young age will usually find it difficult to enter the workforce. In the medium term, this will make it difficult for

them to work optimally, which will reduce their competitiveness in the job market, and ultimately lead to fewer women being able to participate in the workforce.

On the social side, Hakiki et, al. (2020) indicates that women who have married at a young age have to bear greater burdens of household responsibilities, experience limitations in socializing, and this will make it difficult to access education and other important resources. This problem will be compounded by health risks, low education levels that make it difficult for women to get married before the age of 18 will find it difficult to fully engage in the world of work. Even if they work, they are usually in the informal sector. These young women who marry early tend to have control over financial decisions. In many cases they become economically dependent on their husbands.

Although the rate of early marriage has decreased in recent years, it is still a serious problem in Indonesia. Legally based on Law No. 1 of 1974 concerning marriage by stipulating that the minimum age for marriage is 19 years, for both men and women. However, in reality, child marriages still often occur, usually through special permission or dispensation from religious courts or related institutions. This exception has generally been due to strong social, economic, and cultural facts in a particular society. This condition has become a major obstacle to efforts to reduce child marriage in Indonesia and has a crucial impact on women's involvement in the workforce. Getting married at a young age often hinders girls from continuing their education and getting a job, which ultimately leads to low female participation in the workforce. These kinds of programs are crucial for giving young people, particularly girls, the confidence to make wise choices regarding their bodies, relationships, and futures. A more open and encouraging atmosphere will also be created by incorporating parents, teachers, and community leaders in these initiatives. Long-term, these measures improve public health and gender equality in addition to lowering the rates of teenage pregnancies and early marriage.

Following on from the analysis, this section will describe the impacts seen specifically in each province.These effects are calculated by adding the overall coefficient of the FLFP variable (C) to the province-specific coefficient (Ci) identified in the study. The resulting values represent how each province uniquely reflects the influence of FLFP. The detailed outcomes of these individual effects are presented in Table 2 below.

The estimation results presented in Table 2 highlight substantial structural differences among provinces with regard to FLFP. In general, provinces in Eastern Indonesia have high individual effect values. Provinces like Papua, Bali, NTT, and NTB display particularly high actual intercept values, suggesting that women’s participation in the labor force is already strong, even before considering the influence of other independent variables. This phenomenon is closely tied to the cultural norms prevalent in these regions. In Papua, for instance, the persistence of patriarchal cultural structures has paradoxically positioned women at the forefront of family survival efforts. Traditional values tend to emphasize the role of women as caretakers of the family, managers of household affairs, and custodians of cultural and customary practices. Consequently, the backbone of the local economy in Papua is composed of female traders commonly referred to as ‘*mama-mama’*. *Mama Papua* are widely regarded as symbols of strength and wisdom within their communities, holding strategic roles in maintaining social harmony, cultural identity, and even household economic stability (Lekatompessy, 2018). Bali have a similar pattern, where Hindu cultural values view work as *dharma*—a sacred duty that applies equally to men and women. This view encourages women to be more actively involved in the world of work, so that the level of women's work participation in the province is relatively high. Balinese women have also been

known to have a strong spirit which further strengthens their important role in the workforce (Wahyuni & Marhaeni, 2019). In addition to culture, women's involvement in the labor market in these regions is not driven by preference or empowerment, but rather economic necessity and low household income.

In contrast, provinces in Western Indonesia, especially those with an urban and industrial character such as DKI Jakarta, Banten, and Riau, show the low interception value, indicating the magnitude of barriers despite greater aggregate employment opportunities. These barriers can be in the form of high competition or limited access to supporting facilities such as child care. Meanwhile, some provinces are in a moderate position such as Central Kalimantan, North Sumatera, and Central Sulawesi which reflect female participation but are still limited to traditional norms and domestic roles. These differences in characteristics indicate that the policies implemented must be relevant to the needs and conditions of each region. For regions with high participation, the policy direction can be to improve the quality of women's work, especially through protection in the informal sector, access to capital, and improvement of infrastructure that supports access to work. Then, for eastern regions with low participation, the policy direction is more emphasized on the demand side such as recruitment without gender discrimination and the fulfillment of supporting facilities. As for areas with moderate participation, it is necessary to strengthen skills, increase access, along with strengthening the value of gender equality.

Table 2
Individual Effect

No	Province	Ci	C+Ci	No	Province	Ci	C +Ci
1	Papua	21.47878	51.51587	18	Sulawesi Tengah	-0.59983	29.43726
2	Bali	15.41014	45.44723	19	Kep Bangka Belitung	-1.08231	28.95478
3	NTT	9.281914	39.319	20	Jambi	-1.37888	28.65821
4	NTB	8.559558	38.59665	21	Sumatera Barat	-1.50254	28.53455
5	Di Yogyakarta	7.417796	37.45489	22	Gorontalo	-1.87568	28.16142
6	Jawa Tengah	6.610601	36.64769	23	Maluku Utara	-5.07207	24.96502
7	Kalimantan Barat	5.849369	35.88646	24	Sulawesi Selatan	-5.29612	24.74097
8	Jawa Timur	5.58484	35.62193	25	Kalimantan Utara	-5.41039	24.6267
9	Papua Barat	5.368424	35.40551	26	Jawa Barat	-6.37581	23.66129
10	Kalimantan Selatan	5.052234	35.08932	27	Maluku	-7.16324	22.87385
11	Sulawesi Barat	3.785473	33.82256	28	Banten	-8.13243	21.90466
12	Bengkulu	3.476905	33.514	29	Kalimantan Timur	-8.84035	21.19674
13	Sulawesi Tenggara	2.973351	33.01044	30	Aceh	-8.98201	21.05508
14	Sumatera Selatan	2.505321	32.54241	31	Riau	-9.13665	20.90044
15	Lampung	0.673937	30.71103	32	Kepulauan Riau	-9.4091	20.62799
16	Kalimantan Tengah	0.647784	30.68487	33	Sulawesi Utara	-10.3934	19.64368
17	Sumatera Utara	-0.28498	29.75211	34	Dki Jakarta	-13.9227	16.11437

CONCLUSION

The results of this study indicate that women's wages and education, which are economic factors, have a very important role and influence on women's participation in the world of work in Indonesia. This higher wage is actually related to lower participation of women while women who have been in school for a long time are actually more likely to be active in work. Meanwhile, the

high rate of early marriage in these girls has tended to be a sign of health problems that will negatively impact their involvement in the workforce. The results of this study confirm the importance of education as an important factor in increasing women's participation in work throughout Indonesia. In addition, the analysis per province has shown that Papua, Bali, NTB, and NTT have the highest rates of women's work participation and have been influenced by local values and cultures that support women to work. In DKI Jakarta has a lower level of female participation, mainly due to the very tight competition for work and limited job opportunities there.

The study also provides some practical suggestions to help more women enter the workforce, including the importance of expanding access to education for women, especially in remote or disadvantaged areas, by providing scholarships fairly and collaborating between the government and local organizations, this will be able to reach more girls and adolescent girls. Second, in reducing early marriage, the rules related to underage marriage should be tightened and implemented in a more coordinated manner with local leaders, especially those in areas where there are still many practices. In addition, it is also important to ensure understanding and support for sexual and reproductive health and rights from an early age. This will be realized by incorporating complete and inclusive sex education into the school curriculum and by holding campaigns to raise awareness among the wider public. In addition, in order to achieve gender equality in the world of work, it is necessary to have a policy that guarantees equal wages between men and women. The government should encourage a fair and performance-based wage system, therefore women are motivated to keep working and this policy remains realistic for companies. This can be done by providing incentives such as tax reductions or subsidies for companies that have implemented a fair salary system. Lastly, the protection of workers and the expansion of social security benefits, especially for women working in the informal sector, are very important in order to create a more inclusive and sustainable job market. It should be noted that the policy direction must also be based on the conditions and needs of each province.

There are several limitations that need to be considered. One of the main limitations is that the observation time is quite short, therefore it is difficult to see long-term changes from the variables studied. In addition, this study has not been able to distinguish women's participation in the labor force based on the employment sector both from formal and informal or residential locations, namely cities or villages, even though this can provide a more complete picture of factors that can affect participation in the labor market. These limitations can be overcome by the opportunity for further research that can examine the relationship between variables in a longer and more detailed time. Then the results of the research will be stronger and can provide good recommendations

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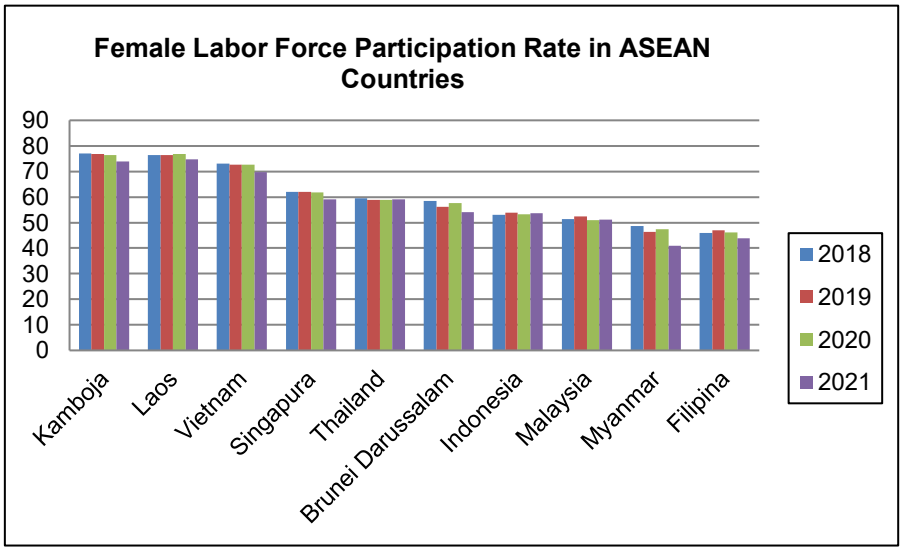
Appendix

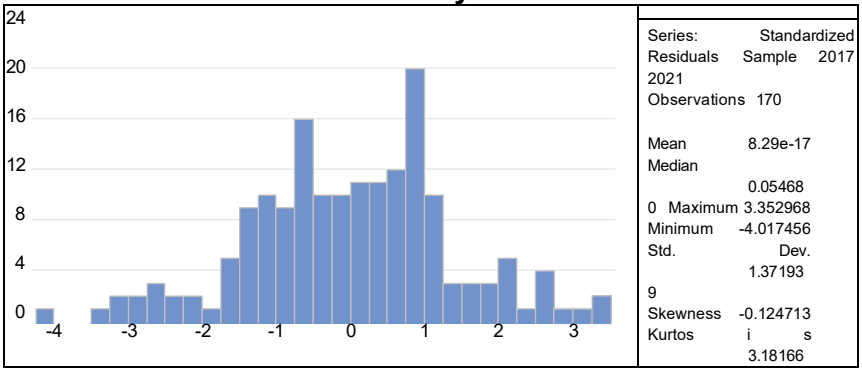


Source: World Bank,2021

Figure 1: Female Labor Force Participation Rate in ASEAN Countries

Classical Asumption Test

Table.3
Normality Test



	2 Jarque-Bera 0.674439 Probability 0.713752

Table.4
Multicolinearity Test

	FWg	EDU	FHH	FER	YWM
FWg	1.000000	-0.032366	-0.000367	-0.055805	-0.019969
EDU	-0.032366	1.000000	0.071319	-0.188193	-0.526058
FHH	-0.000367	0.071319	1.000000	0.057329	-0.272578
FER	-0.055805	-0.188193	0.057329	1.000000	0.130677
YWM	-0.019969	-0.526058	-0.272578	0.130677	1.000000

Table.5
Heterocedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.943991	0.854631	1.104560	0.2714
X1_UP	-0.000873	0.002282	-0.382310	0.7029
X2_PEND	-0.111983	0.085383	-1.311539	0.1920
X3_PKRT	0.022700	0.019098	1.188658	0.2367
X4_FERT	-0.065285	0.096306	-0.677895	0.4990
X5_PDRP	0.004700	0.010905	0.431031	0.6672

Table.6
Autocorrelation Test

Dl	**Du**	**Dw**	**4 – dU**	**4 – Dl**
1.6890	1.8100	1.926482	2.1900	2.3110