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Determinants of women's labor participation rate: Evidence in ASEAN

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Abstract
Attention to women's involvement in the workforce is increasing in social and economic development, particularly in developing countries such as those in ASEAN. However, data indicates that despite progress, the Gender Inequality Index (GII) remains high in ASEAN countries. This condition underscores the importance of focusing specifically on women's empowerment, reproductive health, and participation in the labor market. This research analyzes the influence of wages, women's involvement in parliament, women's life expectancy, fertility rates, and maternal mortality rates on women's labor participation rates in ASEAN. Data for this research was acquired from the World Bank. The study is quantitative, utilizing panel data regression analysis from 2011-2022, covering 11 ASEAN countries, using the Random Effects Model (REM) approach. The research findings indicate that wage, women's life expectancy, fertility rate, and maternal mortality rate variables significantly influence women's labor participation rates in ASEAN from 2011-2022, while women's involvement in parliament does not significantly affect women's labor participation rates. Therefore, ASEAN countries' governments should increase women's wages and healthcare access, promote family planning, support gender equality in education and employment, and enhance women's political participation.

Keywords: ASEAN, Politics, Wages, Women's Labor Participation Rate, Women's Health

Abstrak
Perhatian terhadap partisipasi wanita di pasar kerja semakin meningkat dalam pembangunan sosial dan ekonomi, terutama di negara-negara berkembang khususnya ASEAN. Namun, data menunjukkan bahwa meskipun terjadi kemajuan, Indeks Ketidaksetaraan Gender (IKG) masih tinggi di negara-negara ASEAN. Hal ini menekankan pentingnya fokus khusus pada pemberdayaan wanita, kesehatan reproduksi, dan partisipasi mereka di pasar kerja. Penelitian ini dilakukan untuk menganalisis pengaruh upah, keterlibatan wanita di parlemen, harapan hidup wanita, tingkat kesuburan, dan tingkat kematian ibu terhadap tingkat partisipasi tenaga kerja wanita di ASEAN. Penelitian ini menggunakan data yang diperoleh dari *World Bank.* Penelitian ini bersifat kuantitatif dengan teknik analisis regresi data panel dari tahun 2011-2022 dengan jumlah data observasi sebanyak 11 negara ASEAN dengan pendekatan *Random Effects Model* (REM). Hasil penelitian menunjukkan bahwa variabel upah, harapan hidup wanita, tingkat kesuburan, dan tingkat kematian ibu berpengaruh dan signifikan terhadap tingkat partisipasi tenaga kerja wanita di ASEAN tahun 2011-2022, sedangkan keterlibatan wanita di parlemen tidak berpengaruh signifikan terhadap tingkat partisipasi tenaga kerja wanita. Oleh karena itu, pemerintah di negara-negara ASEAN hendaknya meningkatkan upah dan akses kesehatan untuk wanita, mempromosikan perencanaan keluarga, mendukung kesetaraan gender dalam pendidikan dan pekerjaan, serta meningkatkan partisipasi politik wanita.

Kata kunci: ASEAN, Politik, Upah, Tingkat Partisipasi Tenaga Kerja Wanita, Kesehatan Wanita

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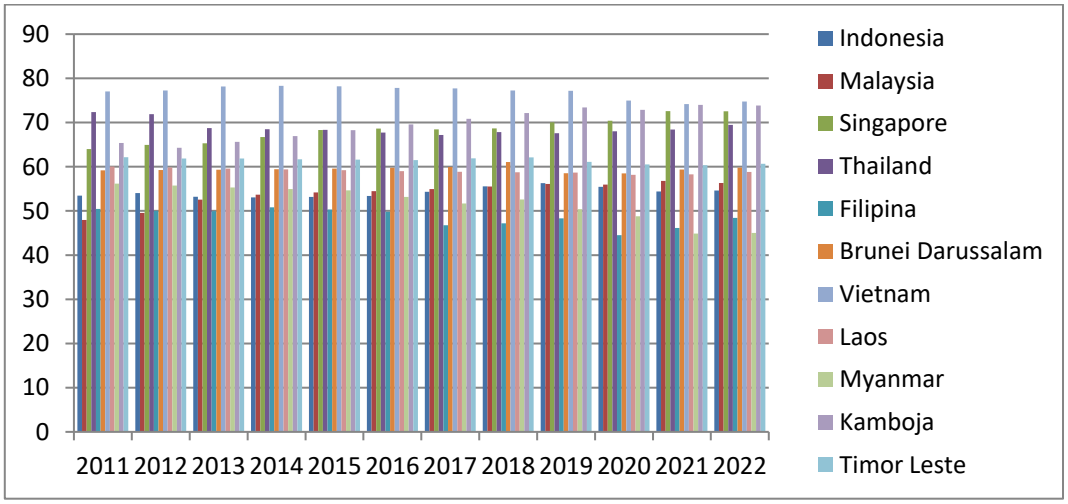
1. Introduction

Increasing attention to women's involvement in the workforce is crucial to social and economic development, particularly in developing countries, especially within ASEAN. Women's involvement in the workforce serves as a primary benchmark for evaluating gender equality and women's economic roles. (Kabeer, 2021; Reichelt et al., 2021). Several studies indicate that women's contributions to the workforce significantly impact economic growth, societal well-being, and gender equality. (Kumari, 2018; Sajjad et al., 2020). Economic growth can also create new jobs in sectors like sustainable manufacturing and renewable energy and enhance economic productivity by involving more women in economic activities. (Balsalobre-Lorente et al., 2018). Diversification and inclusivity in the labor market, strengthened by the increased involvement of women, can create a more innovative and dynamic working environment.

However, research by Al Faizah et al. (2020) Indicates that despite progress, the Gender Inequality Index (GII) remains high in ASEAN countries. This highlights the importance of focusing on women's empowerment, reproductive health, and participation in the labor market. (Braverman-Bronstein et al., 2023). The UNDP states that the Gender Inequality Index (GII) is assessed based on three primary dimensions: economic, social empowerment, and reproductive health. The economic dimension encompasses labor market involvement, whereas the social empowerment encompasses political participation. Meanwhile, the reproductive health dimension involves fertility rates and mortality ratios. (Jayachandran, 2015). However, the GII is weak in integrating metrics that assess both men and women alongside those exclusive to women. Data on women's labor participation rates can be seen in Figure 1.



Source: World Bank, processed 2024

Figure 1. Women's Labor Participation Rate in ASEAN 2011-2022

Figure 1 shows the trend of women's labor participation rates in ASEAN countries from 2011 to 2022. Indonesia, Laos, and Timor Leste demonstrated stable fluctuations in women's labor participation rates compared to other countries during this period. The countries with the highest average women's labor participation rates were Vietnam, Cambodia, and Singapore. On the other hand, the Philippines and Thailand showed a declining trend in women's labor participation rates. Brunei Darussalam had an average women's labor participation rate of 59.47%. Meanwhile, the Philippines, Myanmar, and Malaysia recorded the lowest women's labor participation rates despite experiencing fluctuations from year to year, with average rates ranging from 48% to 54%.

In the context of women's involvement in economic activities and development, various factors such as wages, women's representation in legislative bodies, fertility rates, life expectancy, and maternal mortality rates have significant impacts. (Al Faizah et al., 2020; Aldan, 2021; Kim & Kim, 2014; Lv & Yang, 2018). Earlier studies have also identified several variables affecting women's labor participation rates. (Assaad et al., 2020Albanesi & Kim, 2021; Jayachandran, 2021). Additionally, several empirical studies have explored the relationship between wage levels and women's political representation on women's labor participation rates in various parts of the world. (Al Faizah et al., 2020; Lv & Yang, 2018).

Countries with smaller wage gaps tend to have higher rates of women's labor participation because women perceive the economic benefits of working to be more significant. (Al Faizah et al., 2020). Additionally, women's involvement in politics significantly impacts their participation in the labor market. When women have sufficient political influence, they often propose and implement laws such as gender anti-discrimination regulations in employment to safeguard women's rights. (Hessami & da Fonseca, 2020; Lv & Yang, 2018)Specifically, women's presence in parliament can influence the creation of policies that promote gender equality and enhance women's job prospects. (Erikson & Verge, 2022).

Moreover, variables like fertility rates and the number of children also influence how childcare obligations restrict women's participation in the labor force. (Al Faizah et al., 2020). High fertility rates can restrict women's workforce participation due to the responsibilities of caring for children. (Harsoyo & Sulistyaningrum, 2018). Women are often seen as household members responsible for domestic affairs and childcare. Women's health and well-being, reflected in life expectancy, also impact their ability to participate in the workforce. (Tasseven, 2017)Healthier women, including those in the labor force, are more likely to engage in economic activities. Conversely, when maternal mortality rates are high, women tend to spend more time caring for their families, which can hinder their participation in the labor market. (Al Faizah et al., 2020).

Although many theoretical studies have identified factors influencing women's labor participation rates, further quantitative research is needed to understand how wage and political factors specifically impact this phenomenon, particularly in ASEAN

countries. Previous studies have not been consistent in exploring these factors, highlighting the necessity for additional research to address the knowledge gap and gain a more profound insight into the dynamics of the female labor market within the region. Therefore, this study aims to analyze the influence of wages, women's involvement in parliament, women's life expectancy, fertility rates, and maternal mortality rates on women's labor participation rates in ASEAN from 2011 to 2022.

2. Literature Review

Women's Labor Participation Rate

The theoretical foundation of women's labor participation rates can be seen through the concept of family time allocation introduced by Coviello et al. (2014)According to this concept, women's labor participation rate decisions are influenced by joint family decisions regarding the allocation of individual time for work at home, work in the labor market, or leisure. In household production theory, factors such as the number of children, household size, and unpaid household chores also affect these decisions. (Munro, 2019). Additionally, increasing levels of women's education and decreasing birth rates are supply-side factors influencing women's labor participation rates. Economic development requiring women's labor and increasing living standards also affect demand-side factors. (Harsoyo & Sulistyaningrum, 2018; Assaad et al., 2020). Socio-demographic factors such as marital status and education level, economic factors such as wages and labor market conditions, and cultural factors such as social norms and family values also play a role in influencing women's labor participation rates. (Al Faizah et al., 2020).

Women's Wages

The theoretical foundations of women's wages can be analyzed through three main approaches in labor economics. From a neoclassical perspective, women's wages are determined by the interaction of labor supply and demand, influenced by factors such as skills, education, and work experience. (Lang & Dickens, 2017). Wage gaps between genders can reflect differences in job characteristics or wage discrimination. (Cortina et al., 2021). Meanwhile, Keynesian theory highlights that women's wages can be influenced by fiscal and monetary policies, as well as factors beyond absolute wage levels, with the inability to adjust nominal wages as a strategy to maintain aggregate demand. (Basu & House, 2016). Within the framework of labor market segmentation theory, differences in wage negotiations between primary and secondary sectors and gender-based job segregation can affect women's wages. Job security and career advancement opportunities can also play a role in determining wages for women workers. (Kabeer, 2021).

Women's Involvement in Parliament

A complex interplay of factors influences the political participation of women in society. Political modernization and changes in social structures play crucial roles by providing women greater access to education and economic opportunities, thereby enhancing their political engagement (Arshad & Khurram, 2020). Intellectuals and modern mass

media also significantly contribute by offering access to information and promoting political awareness among women. Conflicts among political leaders can spur women to participate politically, driven by perceptions that their interests are inadequately represented (Wolak, 2022). Moreover, government involvement in social and economic affairs, such as through programs supporting family welfare and gender equality, can further encourage women's political participation (Aspinall et al., 2021). In this context, women's political engagement mirrors an increase in their political consciousness and responds to evolving social and political dynamics in society.

Fertility Rate

The fertility rate is a complex phenomenon encompassing biological, social, economic, and demographic aspects. Biologically, fertility refers to an individual's ability to produce offspring or live births, primarily limited to women of reproductive age. (Vander Borght & Wyns, 2018). However, fertility is not only about childbirth but also involves the process of raising children to adulthood. Socially, there is a complex relationship between fertility and women's labor force participation, where increased fertility tends to reduce women's labor participation rates due to the time and energy demands of child-rearing (Al Faizah et al., 2020). From an economic perspective, children can be seen as consumer goods that provide certain satisfaction to parents, so the decision to have children is influenced by factors such as family income, child-rearing costs, and parental preferences. (Cooper & Stewart, 2021). Additionally, the use of the gender composition of children as an instrument for fertility suggests that the decision to have more children can be influenced by the desire to have a different gender combination of children. Aggregate fertility is measured using the Total Fertility Rate (TFR), which refers to the average number of children women give birth to during their reproductive years. (Cheng et al., 2022).

Women's Life Expectancy

The theoretical framework regarding women's life expectancy encompasses several factors collectively influencing longevity in the female population. Genetic factors, such as inheritance from parents, may play a role in determining the potential for long life in women. (Bin-Jumah et al., 2022). Environmental factors, such as air and water quality, access to healthcare services, and pollution levels, can affect women's health and longevity. (Abdullah et al., 2016). Lifestyle choices, including dietary patterns, levels of physical activity, alcohol consumption, and smoking habits, also significantly impact women's life expectancy. (Mollaioli et al., 2020). Additionally, chronic health conditions such as cardiovascular diseases, diabetes, and cancer play a significant role in determining life expectancy. (Li et al., 2020). Factors related to well-being, such as access to education, stable employment, quality healthcare services, and social support, significantly influence women's life expectancy. (Baum et al., 2021)Theories of aging, which include concepts such as damage due to excessive use of the body and cells, the role of the endocrine system, cell replication limits, and the accumulation of oxidative damage, provide essential insights into understanding the complexity of factors influencing women's life expectancy. (Go & Jones, 2017).

Maternal Mortality Rate

The death of a mother is not only a loss for the individual but also profoundly impacts the entire family. (Prime et al., 2020). Mothers are often regarded as sources of love, support, and protection for children and spouses, making their loss profoundly heartbreaking. The grieving process after losing a mother involves significant adjustments in family roles, where children may need to take on responsibilities previously held by their mother. Additionally, it is essential to consider cultural perspectives in responding to the death of a mother, as beliefs, mourning rituals, and commemorative traditions can influence how families grieve and adapt to the loss. (Ayebare et al., 2021). Beyond the profound emotional and psychological impacts, the death of a mother also has significant economic implications. One aspect affected is women's labor participation rates. Research by Al Faizah et al. (2020) Shows that high maternal mortality rates may be associated with low women labor participation rates. This is due to several factors, including the additional burden shouldered by other women's family members in managing household and childcare responsibilities after the loss of a mother. As a result, women may have to reduce their working hours or even leave their jobs to handle increased household responsibilities.

3. Research Method

This research employs panel data regression analysis, utilizing three main estimation models: Common Effects Model (CEM), Fixed Effects Model (FEM), and Random Effects Model (REM). The Chow Test and the Hausman Test are employed to determine the best-fitting model among them. Thus, this study employs the following econometric models:

$$\mathrm{WLPR}_{it} = \beta_0 + \beta_1 \mathrm{WWS}_{it} + \beta_2 \mathrm{WIP}_{it} + \beta_3 \mathrm{WLE}_{it} + \beta_4 \mathrm{WFR}_{it} + \beta_5 \mathrm{MMR}_{it} + \varepsilon_{it}$$

Note:

WLPR: Women's Labor Participation Rate (%)
WWS: Women's Wages and Salaries (%)
WIP: Women's Involvement in Parliament (%)
WLE: Women's Life Expectancy (%)
WFR: Fertility Rate (%)
MMR: Maternal Mortality Rate (per 100,000 live births)
β_0 : Constant
$\beta_1 \ldots \beta_5$: Independent Variable Regression Coefficient
ε: Error Factor
it: Panel Data (time series and cross section)

This study is a quantitative analysis using secondary data, which refers to data already collected and available from indirect or second-hand sources. The data sources for this research are obtained from the official website of the World Bank. The research utilizes panel data, combining time series data from 2011 to 2022 with cross-sectional data from 11 countries in the ASEAN region. This data panel was chosen to capture temporal variations during the period and differences among the ASEAN

countries. The research employs a saturated sampling technique, including all ASEAN member countries as the research sample, resulting in a final sample size of 132. This study explains the relationship between women's labor participation rates (the dependent variable) and several independent variables: wages, women's involvement in parliament, life expectancy of women, fertility rate, and maternal mortality rate.

4. Results and Discussion

4.1. Results

Table 1 summarizes the results of the panel data regression in the econometric model, along with supplementary tests.

Table 1. Panel Data Regression Results

Variable	Regression Coefficients		
	CEM	FEM	REM
C	-120.5113	11.48454	-14.11346
WWS	-0.149885	-0.157796	-0.139603
WIP	0.075345	0.013333	0.014359
WLE	2.399095	0.813520	1.129841
WFR	-1.053982	-5.348967	-5.067727
WMR	0.080833	0.066109	0.068890
R^2	0.691176	0.953647	0.253454
Adjusted R^2	0.678922	0.947654	0.223829
Statistics F	56.39999	159.1040	8.555466
Prob. Statistics F	0.000000	0.000000	0.000001
Model Selection Test			
[1] Test Chow			
Cross Section F (10.116) = 65.684972*; Prob. F(10.116)* = 0.0000			
[2] Hausman test			
Cross Section Random $\chi^2(5)$ = 6.309997*; Prob.* χ^2 *(5)* = 0.2772			

Model Selection Test (Chow)

The Chow test helps determine whether the estimated model should be the Common Effect Model (CEM) or the Fixed Effect Model (FEM). The null hypothesis (H_0) in the Chow test assumes that the estimated model is the Common Effect Model (CEM). In contrast, the alternative hypothesis (H_A) assumes it is the Fixed Effect Model (FEM). H_0 is accepted if the p-value or probability associated with the F statistic is more significant than α (the significance level); H_0 is rejected if this p-value is less than or equal to α. According to Table 1, the Chow test result indicates a Prob. F value of 0.0000, which is less than 0.1. Therefore, H_A is accepted. This leads to the conclusion that the chosen model is the Fixed Effect Model (FEM).

Model Selection Test (Hausman)

The Hausman test is employed to decide between using the Fixed Effects Model (FEM) or the Random Effects Model (REM). The null hypothesis (H_0) of the Hausman test suggests that the preferred model is REM, while the alternative hypothesis (H_A) suggests that FEM is preferred. H_0 is accepted if the p-value is more significant than α (usually 0.1), indicating that REM is the preferred model. According to Table 1, the

Hausman test reports a probability value (Prob.) of 0.2772, more significant than 0.1. Therefore, H_0 is accepted, suggesting that the selected model is REM.

$$\widehat{WLPR}_{it} = -14.11346 - 0.139603\, WWS_{it} + 0.014359\, WIP_{it} + 1.129841 WLE_{it} - 5.067727 WFR_{it} + 0.068890 WMR_{it}$$

Test (Partial Test)

The t-test assesses whether each independent variable has a statistically significant impact on the dependent variable under the assumption that all other variables remain constant. The null hypothesis (H_0) for the t-test is $\beta i = 0$ (i = 1-5), meaning that individually, wages (WWS), women's involvement in parliament (WIP), women's life expectancy (WLE), fertility rate (WFR), and maternal mortality rate (MMR) do not affect women's labor participation rates (WLPR) in ASEAN from 2011 to 2022. Meanwhile, the alternative hypothesis (H_A) for the t-test is $\beta i \neq 0$ (i = 1-5), indicating that individually, wages (WWS), women's involvement in parliament (WIP), women's life expectancy (WLE), fertility rate (WFR), and maternal mortality rate (MMR) affect women's labor participation rates (WLPR) in ASEAN from 2011 to 2022. H_0 is not rejected if the probability of the t-statistic is more significant than α, and H_0 is rejected if the probability of the t-statistic is less than α. The results of the t-test are displayed in Table 2.

Table 2. t Test Results (Partial Test)

Variable	Probability t-statistic	Criteria	Note
WWS	0.0236	< 0.05	Sig. at α = 0.05
WIP	0.8269	> 0.1	Not sig. at α = 0.1
WLE	0.0003	< 0.01	Sig. at α = 0.01
WFR	0.0007	< 0.01	Sig. at α = 0.01
MMR	0.0000	< 0.01	Sig. at α = 0.01

Based on Table 2, the probability of the t-statistic for WWS is 0.0236 (< 0.05), for WLE is 0.0003 (< 0.01), for WFR is 0.0007 (< 0.01), and for MMR is 0.0000 (< 0.01). This indicates that WWS, WLE, WFR, and MMR significantly influence WLPR, thereby rejecting the null hypothesis. Conversely, the probability of the t-statistic for WIP is 0.8269 (> 0.1), suggesting that WIP does not significantly affect WLPR, thus accepting the null hypothesis. Consequently, wages (WWS), women's life expectancy (WLE), fertility rate (WFR), and maternal mortality rate (MMR) significantly influence women's labor participation rates (WLPR) in ASEAN from 2011 to 2022, while women's involvement in parliament (WIP) does not.

Coefficient Determination

The coefficient of determination (R^2) indicates the predictive power of the estimated model. From Table 1, it can be seen that the value of R^2 is 0.2534, meaning that 25.34% of the variation in women's labor participation rates (WLPR) can be explained by the variables wage (WWS), women's involvement in parliament (WIP), women's life expectancy (WLE), fertility rate (WFR), and maternal mortality rate (MMR). The remaining 74.66% is explained by other variables not included in the estimated model.

F Test (Simultaneous Test)

The F-test, also known as the simultaneous significance test, assesses the combined impact of independent variables on the dependent variable. The F-test's null hypothesis (H0) posits that the independent variables collectively do not affect the dependent variable. The alternative hypothesis (H_A) posits that they do. H_0 is upheld when the probability associated with the F-statistic is more significant than α, signifying insufficient evidence to reject the null hypothesis. Conversely, H_0 is rejected when the probability associated with the F-statistic is less than α, suggesting sufficient evidence to conclude that the independent variables collectively affect the dependent variable. Based on Table 1, the probability value of the F-statistic is 0.0000 (< 0.01), thus rejecting H_0. Therefore, it can be concluded that wages, women's involvement in parliament, women's life expectancy, fertility rate, and maternal mortality rate collectively affect women's labor participation rates in ASEAN from 2011 to 2022.

4.2. Discussion

The influence of wages on women's labor participation rates in ASEAN. Based on the validity test results of the influence (t-test) in the econometric model, wages significantly influenced women's labor participation rates in ASEAN from 2011 to 2022. This is consistent with the research by Aldan (2021), which indicates that wages significantly influence women's labor participation rates in Turkey. An increase in wages can encourage more women to join or stay in the labor market due to the increased financial incentives for working. (Kabeer, 2021; Lang & Dickens, 2017). However, excessively high wages can also be a barrier for some women to seek or maintain employment, especially if the cost of childcare or other family members exceeds the income earned from work.

The influence of women's involvement in parliament on women's labor participation rates in ASEAN. Based on the validity test results of the influence (t-test) in the econometric model, it is indicated that women's involvement in parliament does not significantly affect women's labor participation rates in ASEAN from 2011 to 2022. This aligns with the findings of Putri & Ariusni (2024), where women's involvement in parliament does not significantly affect women's labor participation rates in Indonesia. However, this contradicts the research by Al Faizah et al. (2020) and Lv & Yang (2018), which shows that women's involvement in parliament significantly influences women's labor participation rates in various countries worldwide. This could be due to several factors, such as inadequate economic policies to encourage women's labor participation rates, social or cultural barriers still hindering women from working, or a lack of infrastructure support to accommodate the needs of working women. (Aspinall et al., 2021). Thus, although women's representation in parliament can be a positive step towards gender equality, its impact on women's labor participation rates may not be as significant as expected.

The influence of women's life expectancy on women's labor participation rates in ASEAN. Based on the validity test results of the influence (t-test) in the econometric model, it is shown that women's life expectancy significantly influences women's labor participation rates in ASEAN from 2011 to 2022. This is consistent with Al Faizah et al.

(2020) research, which indicates that women's life expectancy significantly affects women's labor participation rates in ASEAN. Better health, longer life expectancy, and the need for more stable financial futures can encourage women to seek employment or pursue economic independence. (Baum et al., 2021). Additionally, with higher life expectancy, women may feel more confident in taking risks in their careers or businesses, as they have more time to achieve their goals. However, these research findings do not align with those of Putri & Ariusni (2024) and Tasseven (2017), who found that women's life expectancy does not significantly affect women's labor participation rates in G8 countries. Higher life expectancy may not directly alter women's preferences or economic needs for employment.

The influence of fertility rates on women's labor participation rates in ASEAN. Based on the validity test results of the influence (t-test) on the econometric model, it is shown that fertility rates have a significant impact on women's labor participation rates in ASEAN from 2011 to 2022. This is consistent with research by Patel (2012) and Putri & Ariusni (2024), which indicates that fertility rates significantly influence women's labor participation rates in India and Indonesia. This is due to the more significant childcare burden for women with more children, which can reduce their ability to engage in economic activities. Women are often faced with the choice between a career and childcare, and with high fertility rates, they are more likely to choose to focus on caregiving roles. (Cooper & Stewart, 2021). Conversely, low fertility rates can increase women's labor participation rates because they may have fewer children to care for, allowing them to be more active in the labor market.

The influence of maternal mortality rates on women's labor participation rates in ASEAN. Based on the validity test results of the influence (t-test) in the econometric model, it is indicated that maternal mortality rates significantly affect women's labor participation rates in ASEAN from 2011 to 2022. This finding contradicts the research by Al Faizah et al. (2020), which suggests that maternal mortality rates do not significantly affect women's labor participation rates in ASEAN. Maternal mortality can cause severe disruptions in family life, including the loss of significant economic and social contributions from a mother. (Prime et al., 2020). When a mother dies, remaining family members, especially children, may require more attention and care, which, in turn, may limit the ability of other women in the family to work outside the home. (Ayebare et al., 2021).

5. Conclusion

Based on the research findings, it can be concluded that wages, women's life expectancy, fertility rates, and maternal mortality rates significantly impact women's labor participation rates in the 11 ASEAN countries from 2011 to 2022. However, women's involvement in parliament does not significantly influence women's labor participation rates in ASEAN. Additionally, wages, women's involvement in parliament, women's life expectancy, fertility rates, and maternal mortality rates collectively influence women's labor participation rates in ASEAN countries. Recommendations for governments in ASEAN countries include enhancing policies that support wage

increases for women workers and improving accessibility and quality of healthcare services, especially for women. Governments should also focus on raising awareness about family planning and reproductive health and support initiatives to enhance gender equality in access to education and job opportunities. Furthermore, governments need to continue promoting women's political participation as part of broader efforts to achieve gender equality and strengthen women's roles in economic and social development. This research is limited to ASEAN countries only, so the generalization of its results may be restricted to that region and may not be applicable globally. Future researchers are advised to expand the geographic scope of the study to compare the effects of these variables in various countries with different cultures.

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References

Al Faizah, S. A., Mafruhah, I., & Sarungu, J. J. (2020). Does Women's Reproductive Health and Empowerment Affect Female Labor Participation in ASEAN? *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, *21*(1), 32–39. https://doi.org/10.23917/jep.v21i1.10387

Albanesi, S., & Kim, J. (2021). Effects of the COVID-19 recession on the US labor market: Occupation, family, and gender. *Journal of Economic Perspectives*, *35*(3), 3–24. https://doi.org/10.1257/jep.35.3.3

Aldan, A. (2021). Rising Female Labor Force Participation and Gender Wage Gap: Evidence From Turkey. *Social Indicators Research*, *155*(3), 865–884. https://doi.org/10.1007/s11205-021-02631-9

Arshad, S., & Khurram, S. (2020). Can government's presence on social media stimulate citizens' online political participation? Investigating the influence of transparency, trust, and responsiveness. *Government Information Quarterly*, *37*(3), 101486. https://doi.org/10.1016/j.giq.2020.101486

Aspinall, E., White, S., & Savirani, A. (2021). Women's Political Representation in Indonesia: Who Wins and How? *Journal of Current Southeast Asian Affairs*, *40*(1), 3–27. https://doi.org/10.1177/1868103421989720

Ayebare, E., Lavender, T., Mweteise, J., Nabisere, A., Nendela, A., Mukhwana, R., Wood, R., Wakasiaka, S., Omoni, G., Kagoda, B. S., & Mills, T. A. (2021). The impact of cultural beliefs and practices on parents' experiences of bereavement following stillbirth: a qualitative study in Uganda and Kenya. *BMC Pregnancy and Childbirth*, *21*(1), 1–10. https://doi.org/10.1186/s12884-021-03912-4

Balsalobre-Lorente, D., Shahbaz, M., Roubaud, D., & Farhani, S. (2018). How economic growth, renewable electricity and natural resources contribute to CO2 emissions? *Energy Policy*, *113*(82252), 356–367.

https://doi.org/10.1016/j.enpol.2017.10.050

Baum, F., Musolino, C., Gesesew, H. A., & Popay, J. (2021). New perspective on why women live longer than men: An exploration of power, gender, social determinants, and capitals. *International Journal of Environmental Research and Public Health*, *18*(2), 1–23. https://doi.org/10.3390/ijerph18020661

Bin-Jumah, M. N., Nadeem, M. S., Gilani, S. J., Al-Abbasi, F. A., Ullah, I., Alzarea, S. I., Ghoneim, M. M., Alshehri, S., Uddin, A., Murtaza, B. N., & Kazmi, I. (2022). Genes and Longevity of Lifespan. *International Journal of Molecular Sciences*, *23*(3), 1–27. https://doi.org/10.3390/ijms23031499

Braverman-Bronstein, A., Ortigoza, A. F., Vidaña-Pérez, D., Barrientos-Gutiérrez, T., Baldovino-Chiquillo, L., Bilal, U., Friche, A. A. de L., Diez-Canseco, F., Maslowsky, J., Vives V., A., & Diez Roux, A. V. (2023). Gender inequality, women's empowerment, and adolescent birth rates in 363 Latin American cities. *Social Science and Medicine*, *317*(October 2022). https://doi.org/10.1016/j.socscimed.2022.115566

Cheng, H., Luo, W., Si, S., Xin, X., Peng, Z., Zhou, H., Liu, H., & Yu, Y. (2022). Global trends in total fertility rate and its relation to national wealth, life expectancy and female education. *BMC Public Health*, *22*(1), 1–13. https://doi.org/10.1186/s12889-022-13656-1

Cooper, K., & Stewart, K. (2021). Does Household Income Affect children's Outcomes? A Systematic Review of the Evidence. *Child Indicators Research*, *14*(3), 981–1005. https://doi.org/10.1007/s12187-020-09782-0

Cortina, C., Rodríguez, J., & González, M. J. (2021). Mind the Job: The Role of Occupational Characteristics in Explaining Gender Discrimination. *Social Indicators Research*, *156*(1), 91–110. https://doi.org/10.1007/s11205-021-02646-2

Coviello, D., Ichino, A., & Persico, N. (2014). Time allocation and task juggling. *American Economic Review*, *104*(2), 609–623. https://doi.org/10.1257/aer.104.2.609

Erikson, J., & Verge, T. (2022). Gender, Power and Privilege in the Parliamentary Workplace. *Parliamentary Affairs*, *75*(1), 1–19. https://doi.org/10.1093/pa/gsaa048

Geng, J. (2017). The Impact of Environmental Quality on Household Health Care Expenditure. *Advances in Social Sciences*, *06*(09), 1135–1144. https://doi.org/10.12677/ass.2017.69162

Go, Y. M., & Jones, D. P. (2017). Redox theory of aging: Implications for health and disease. *Clinical Science*, *131*(14), 1669–1688. https://doi.org/10.1042/CS20160897

Harsoyo, A., & Sulistyaningrum, E. (2018). Pengaruh Fertilitas Terhadap Partisipasi Tenaga Kerja Perempuan. *Jurnal Ekonomi Kuantitatif Terapan*, 130. https://doi.org/10.24843/jekt.2018.v11.i02.p01

Hessami, Z., & da Fonseca, M. L. (2020). Female political representation and substantive effects on policies: A literature review. *European Journal of Political Economy*, *63*(8155). https://doi.org/10.1016/j.ejpoleco.2020.101896

Jayachandran, S. (2015). The Roots of Gender Inequality in Developing Countries. *Annual Review of Economics*, *7*(1), 63–88. https://doi.org/10.1146/annurev-economics-080614-115404

Jayachandran, S. (2021). Social Norms As a Barrier To Women's Employment. *IMF Economic Review*, *69*(3), 576–595.

Kabeer, N. (2021). Gender equality, inclusive growth, and labour markets. *Women's Economic Empowerment: Insights from Africa and South Asia*, *44*(0), 13–48. https://doi.org/10.4324/9781003141938-3

Kim, J. I., & Kim, G. (2014). Labor force participation and secondary education of gender inequality index (GII) associated with healthy life expectancy (HLE) at birth. *International Journal for Equity in Health*, *13*(1), 1–8. https://doi.org/10.1186/s12939-014-0106-2

Kumari, R. (2018). Economic growth, disparity, and determinants of female labor force participation. *World Journal of Entrepreneurship, Management and Sustainable Development*, *14*(2), 138–152. https://doi.org/10.1108/wjemsd-03-2017-0009

Lang, K., & Dickens, W. T. (2017). Neoclassical and sociological perspectives on segmented labor markets. *Industries, Firms, and Jobs: Sociological and Economic Approaches: Expanded Edition*, *January*, 65–88. https://doi.org/10.4324/9780203788639

Li, Y., Schoufour, J., Wang, D. D., Dhana, K., Pan, A., Liu, X., Song, M., Liu, G., Shin, H. J., Sun, Q., Al-Shaar, L., Wang, M., Rimm, E. B., Hertzmark, E., Stampfer, M. J., Willett, W. C., Franco, O. H., & Hu, F. B. (2020). Healthy lifestyle and life expectancy free of cancer, cardiovascular disease, and type 2 diabetes: Prospective cohort study. *The BMJ*, *368*, 1–10. https://doi.org/10.1136/bmj.l6669

Lv, Z., & Yang, R. (2018). Does women's participation in politics increase female labor participation? Evidence from panel data analysis. *Economics Letters*, *170*, 35–38. https://doi.org/10.1016/j.econlet.2018.05.013

Mollaioli, D., Ciocca, G., Limoncin, E., Di Sante, S., Gravina, G., & Carosa, E. (2020). Lifestyles and sexuality in men and women: The gender perspective in sexual medicine. Reproductive Biology and Endocrinology [revista en Internet] 2020 [acceso 2 de julio de 2021]; 18(1): 1-11. *Reproductive Biology and Endocrinology*, *18*(10), 1–11.

Munro, K. (2019). *"Social Reproduction Theory," Social Reproduction, and Household Production*. *83*(4), 451–468.

Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, *75*(5), 631–643. https://doi.org/10.1037/amp0000660

Putri, R. E., & Ariusni, A. (2024). Pengaruh Kesehatan Reproduksi Wanita dan Pemberdayaan Wanita Terhadap Tingkat Partisipasi Angkatan Kerja Wanita di Indonesia. *Jurnal Kajian Ekonomi Dan Pembangunan*, *6*(1), 1. https://doi.org/10.24036/jkep.v6i1.15833

Reichelt, M., Makovi, K., & Sargsyan, A. (2021). The impact of COVID-19 on gender inequality in the labor market and gender-role attitudes. *European Societies*, *23*(S1), S228–S245. https://doi.org/10.1080/14616696.2020.1823010

Sajjad, M., Kaleem, N., Chani, M. I., & Ahmed, M. (2020). Worldwide role of women entrepreneurs in economic development. *Asia Pacific Journal of Innovation and Entrepreneurship*, *14*(2), 151–160. https://doi.org/10.1108/apjie-06-2019-0041

Tasseven, O. (2017). The relationship between economic development and female labor force participation rate: A panel data analysis. *Contributions to Economics*, *2018*, 555–567. https://doi.org/10.1007/978-3-319-47021-4_38

Vander Borght, M., & Wyns, C. (2018). Fertility and infertility: Definition and epidemiology. *Clinical Biochemistry*, *62*(February), 2–10. https://doi.org/10.1016/j.clinbiochem.2018.03.012

Wolak, J. (2022). Conflict Avoidance and Gender Gaps in Political Engagement. *Political Behavior*, *44*(1), 133–156. https://doi.org/10.1007/s11109-020-09614-5