

## Determinants of female labor force participation in the Bangka Belitung Islands Province

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### Abstract

This study examines the key factors shaping women's labor-market participation in the Bangka Belitung Islands Province, Indonesia, where gender disparities in employment persist. It aims to analyze how demographic and economic characteristics influence women's decisions to engage in paid work. Using a quantitative approach and a binary logistic regression model, the study draws on data from 100 women aged 15 to 65 years. The analysis evaluates the effects of age, educational attainment, marital status, number of dependents, and household income. The findings indicate that education and household income are significant determinants of women's labor force participation. Women with a junior high school education are significantly less likely to participate in the labor market than those with a tertiary education. Meanwhile, higher household income contributed by other family members reduces women's likelihood of working. However, age, marital status, and the number of dependents do not have statistically significant effects. These results underscore the importance of human capital and household economic conditions in shaping women's labor market behavior in resource-based regions. The study also provides policy-relevant insights for promoting more inclusive labor markets through investments in education, skills development, and gender-responsive employment strategies.

**Keywords:** *Female labor participation; Human capital; Income effect; Labor supply*

**JEL Classification:** J21, J24, O15

### INTRODUCTION

Labor force participation is one of the fundamental indicators of a country's economic performance and social inclusion. It reflects the extent to which the working-age population engages in productive activities and the degree to which economic growth translates into equitable access to employment opportunities (Klasen, 2019). In labor economics, labor supply is determined by the trade-off between individual preferences for leisure and the monetary returns to work. The labor-leisure model posits that higher wage rates initially increase labor supply as individuals substitute work for leisure; however, at higher income levels, the income effect may dominate, leading to reduced

working hours and the emergence of a backward-bending labor supply curve (Mawadah, 2017; Tarmizi, 2012). This theoretical framework suggests that participation decisions are shaped not only by wages but also by broader socio-economic and cultural factors that influence labor market behavior.

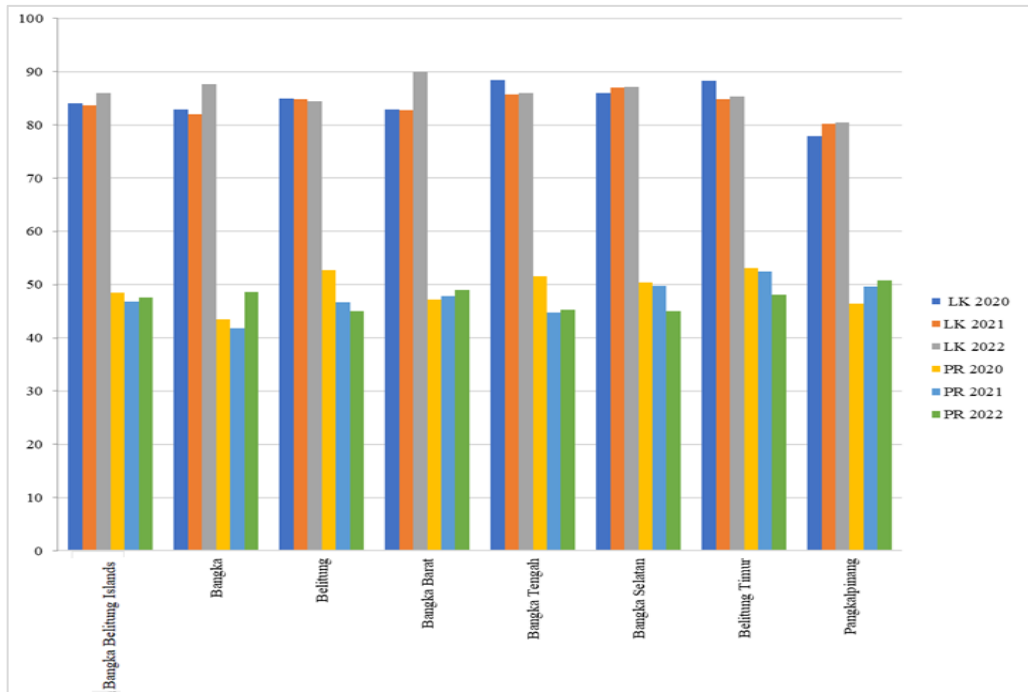
Female labor force participation (FLFP) serves as a key indicator of gender equality and economic empowerment. It reflects the extent to which women have access to productive employment, contribute to household income, and improve overall welfare (Cazes & Verick, 2013; Lari et al., 2022). Nevertheless, in many developing economies, women's participation remains constrained by structural, institutional, and cultural barriers (Al-Ammari & Romanowski, 2016; Verick, 2025). Traditional gender norms often assign women to domestic roles, while limited access to education, skills development, and childcare services further restricts their engagement in paid employment (Majbouri, 2020; Spierings, 2017).

In Indonesia, women's labor market participation has gradually improved over the past decade; however, gender disparities persist in both participation rates and job quality. Empirical studies indicate that education, marital status, and family responsibilities are significant determinants of women's participation decisions (Epinda et al., 2021; Rizma et al., 2023). However, the magnitude and direction of these effects vary across regions and economic structures. For example, in industrial and urban areas, higher levels of education and greater access to formal employment tend to increase participation (Utami & Ariusni, 2023), whereas in rural or resource-based regions, participation is more strongly influenced by household economic needs and wage levels (Sukma et al., 2018; Safirah, 2022). These variations underscore the importance of contextualizing labor participation within local socio-economic conditions.

The Bangka Belitung Islands Province provides a distinctive context for examining these dynamics. Despite its abundance of natural resources—particularly in tin mining, fisheries, and tourism—the province recorded one of the lowest labor force participation rates in Sumatra, at 67.38 percent in 2022. Within this figure, the gender gap remains substantial: male participation exceeds 85 percent, while female participation remains below 55 percent. This persistent disparity reflects both structural and cultural challenges, including limited economic diversification, the dominance of male-oriented industries, and social expectations that prioritize women's domestic responsibilities (Sumarsono, 2009; Zainal et al., 2017).

Figure 1 shows that the female labor force participation rate (LFPR) in the Bangka Belitung Islands Province increased steadily from 2020 to 2022 across all regencies and municipalities. Despite this upward trend, women's participation remains consistently lower than men's across all areas presented. The gender gap is most pronounced in Belitung and Bangka Barat Regencies, where male participation exceeds 80 percent while female participation remains below 60 percent. In contrast, Pangkalpinang City exhibits a relatively narrower gap, suggesting that urban environments may provide greater access and opportunities for women to participate in the labor market.

Overall, the pattern indicates that men continue to dominate the province's labor market, reflecting structural and cultural barriers that constrain women's economic participation. Although gradual improvements are evident—particularly in urban areas—female labor force participation remains limited by insufficient employment diversification, reliance on primary sectors such as mining and fisheries, and persistent gender norms in the division of household labor. These conditions highlight the need for empirical analysis to identify the key demographic and economic factors influencing women's labor participation, as this study does.



**Figure 1.** Labor force participation rate by gender in Bangka Belitung Province  
*Source: BPS Provinsi Kepulauan Bangka Belitung, 2024*

Previous studies in Indonesia have examined women’s labor participation across various contexts. Research by Hotchkiss (2006) and Kiani (2009) emphasizes the roles of household income, education, and the presence of dependents in shaping female labor supply decisions. Sasongko et al. (2020) and Al Azies (2023) find that wage levels and household economic conditions significantly influence women’s labor force participation, particularly among lower-income families. However, most of these studies focus on urban or industrial regions, leaving resource-based provinces such as Bangka Belitung relatively underexplored. The combination of a resource-dependent economy, limited formal employment opportunities, and entrenched gender norms creates a distinctive context that may yield different determinants of female labor participation compared to other regions.

This study examines the factors influencing women’s labor-market participation in the Bangka Belitung Islands Province using a binary logit framework. It analyzes how demographic and economic variables—such as age, education level, marital status, number of household dependents, wages, and family income—affect women’s likelihood of engaging in paid employment. This research makes three primary contributions to the existing literature. First, it provides empirical evidence from a resource-based provincial context that has received limited scholarly attention. Second, it elucidates how socio-economic and demographic factors jointly shape women’s labor-market behavior. Third, it offers practical recommendations to help policymakers formulate gender-sensitive labor policies that increase women’s participation and promote equitable regional economic growth.

## METHODS

### Scope of the study and research design

This study investigates the key factors influencing female labor force participation in Bangka Belitung Province, Indonesia. A quantitative interpretive approach was

employed to analyze how various demographic and economic characteristics affect women’s employment decisions.

A cross-sectional research design was adopted, using primary data collected from working-age women aged 15 to 65 in both urban and rural areas. As the dependent variable—female labor force participation—is binary (1 = working; 0 = not working), binary logistic regression (logit model) was applied as the main analytical tool. This model is appropriate for estimating the probability of female labor force participation based on observable individual and household characteristics.

**Data sources and sampling procedure**

This study relies on primary data collected through a structured survey, complemented by in-depth interviews with women aged 15 to 65 across the Bangka Belitung Islands Province. The province consists of seven administrative areas—six regencies and one city—representing a mix of urban and rural labor markets. The survey instrument was designed to capture variations in demographic characteristics and socio-economic conditions that may influence women’s labor force participation.

The total female labor force population in Bangka Belitung was 262,428 individuals (BPS Kepulauan Bangka Belitung, 2023). To determine the minimum required sample size, the Slovin formula was applied as follows:

$$n = \frac{N}{1 + N(e)^2} = \frac{262,428}{1 + 262,428(0.1)^2} \approx 100$$

where :

- n* : sample size
- N* : population size (262,428 individuals),
- e* : margin of error (10%).

To achieve balanced representation across districts and the city, a proportionate stratified random sampling technique was employed. Each administrative region was treated as a stratum, and the number of respondents selected from each area was proportional to its female labor force population. The final allocation of respondents is presented in Table 1.

**Table 1.** Sample distribution by region in the Bangka Belitung Islands province

No.	District / City	Number of Respondents (n <sub>i</sub> )
1	Bangka Regency	15
2	Belitung Regency	14
3	West Bangka Regency	15
4	Central Bangka Regency	14
5	South Bangka Regency	14
6	East Belitung Regency	15
7	Pangkalpinang City	13
<b>Total</b>		<b>100</b>

Within each stratum, respondents were randomly selected from community-based household lists, labor force databases, and local employment office records to ensure the data reflected the province's socio-economic diversity. This sampling design enhances the representativeness and generalizability of the findings for Bangka Belitung.

**Operational definition of variables**

To ensure clarity and replicability, all variables used in this study are operationally defined. The dependent variable represents women’s labor force participation, while the independent variables capture demographic and economic characteristics expected to

influence this outcome. The definitions, measurement scales, and classifications are summarized in Table 2.

**Table 2.** Operational definition and measurement of variables

Variable	Definition	Measurement	Scale
Female Labor Force Participation (FLFP)	The respondent’s decision to engage in economic activity as an employee or self-employed worker	Dummy variable: 1 = working; 0 = not working	Nominal
Age (AGE)	The respondent’s age, reflecting productive capacity and work experience	Measured in years (15–65)	Ratio
Education (EDU)	Highest completed level of formal education, reflecting skills and employability	Ordinal categories: 1 = Primary School; 2 = Junior High School; 3 = Senior High School; 4 = Higher Education (reference category)	Ordinal
Marital Status (MAR)	The respondent’s marital status potentially affects participation due to domestic responsibilities.	Dummy variable: 1 = Married; 0 = Unmarried/Widowed	Nominal
Number of Dependents (DEP)	Total number of family members financially dependent on the respondent (children, spouse, parents)	Count variable	Ratio
Family Income (INC)	Total monthly income of other household members, excluding the respondent’s income (non-labor income)	Measured in Indonesian Rupiah; log-transformed as $\ln(\text{INC})$	Ratio

The theoretical expectations for each variable are derived from labor supply theory. Age is expected to have a positive relationship with labor participation up to a certain productive age, after which participation may decline. Education is expected to increase labor force participation by enhancing access to employment opportunities. In the empirical model, education is represented by dummy variables, with higher education serving as the reference category to reflect the highest level of human capital and to facilitate comparisons across lower education levels.

Marital status may exert a dual effect: married women may experience greater domestic constraints, while unmarried women may have stronger incentives to participate in the labor market. The number of dependents is expected to increase participation due to heightened household economic needs. Conversely, higher family (non-labor) income may reduce the necessity for women to engage in paid employment.

**Model specification and analytical technique**

This study examines the determinants of female labor force participation in Bangka Belitung Province. Given that the dependent variable is binary (1 = working; 0 = not working), a binary logistic regression (logit) model was employed. This method estimates the probability of labor force participation using demographic and economic characteristics, ensuring that the predicted probabilities remain within [0, 1].

The functional form of the model is specified as follows:

$$\ln \left( \frac{P_i}{1 - P_i} \right) = \beta_0 + \beta_1 AGE_i + \beta_2 EDU_i + \beta_3 MAR_i + \beta_4 DEP_i + \beta_5 INC_i + \varepsilon_i \quad \dots (3)$$

where:

- $P_i$  : probability that the  $i^{th}$  woman participates in the labor force,  
 $\ln\left(\frac{P_i}{1-P_i}\right)$  : log-odds of participation,  
 $\beta_0$  : intercept,  
 $\beta_1, \dots, \beta_5$  : estimated coefficients of explanatory variables, and  
 $\varepsilon_i$  : error term.

The parameters were estimated using Maximum Likelihood Estimation (MLE), which is appropriate for non-linear probability models such as the logit model (Cameron & Trivedi, 2005). The estimated coefficients indicate how a one-unit change in an independent variable affects the log-odds of female labor force participation, holding other factors constant.

Several diagnostic tests were conducted to ensure the validity and reliability of the model:

1. Hosmer–Lemeshow Goodness-of-Fit Test  
 This test compares predicted probabilities with observed outcomes. A p-value greater than 0.05 indicates a good model fit, suggesting that there is no significant difference between the predicted and actual values.
2. McFadden’s Pseudo R-Squared  
 The Pseudo R<sup>2</sup> statistic was used to assess explanatory power. Although typically lower than the R<sup>2</sup> in linear regression, values between 0.10 and 0.40 are considered satisfactory for socio-economic research (Menard, 2002).
3. Classification Accuracy Test  
 Predictive performance was evaluated using a classification matrix that compares predicted and actual outcomes. A correct classification rate above 70 percent is generally regarded as acceptable for cross-sectional labor market studies (Hosmer et al., 2013).
4. Correlation Matrix Analysis  
 Before estimation, a correlation matrix was examined to detect potential multicollinearity among explanatory variables. Correlation coefficients below 0.80 indicate the absence of strong linear relationships, suggesting that each variable contributes distinct information to the model (Gujarati & Porter, 2009). The results confirmed that the independent variables were moderately correlated and free from multicollinearity concerns.

All estimations were conducted using standard econometric procedures for binary response models under the Maximum Likelihood framework. Statistical significance was assessed using conventional criteria, and standard errors were adjusted for heteroskedasticity to ensure robust inference. The logit model was chosen over linear probability and probit models because it produces bounded probability estimates and allows for interpretation in terms of odds ratios, making it particularly suitable for socio-economic research on women’s labor force participation.

## RESULTS AND DISCUSSION

### Descriptive statistics and correlation analysis

The descriptive statistics indicate that approximately 66 percent of women in the sample participated in the labor force, suggesting a relatively high level of economic engagement among respondents. The average age of 28.16 years implies that most surveyed women were in their early productive years, a stage typically associated with strong labor market participation. The mean education level of 3.09 corresponds to senior

high school, indicating that most respondents had completed secondary education.

Regarding marital status, 67 percent of respondents were married, suggesting that family responsibilities may play an important role in their employment decisions. The average number of dependents was 2.6, indicating that most households consisted of small to medium-sized families. In terms of household economic conditions, the mean monthly family income (excluding the respondent’s own income) was approximately IDR 3.59 million, with substantial variation across respondents, as reflected by a standard deviation of IDR 2.81 million.

**Table 3.** Descriptive statistics and correlation matrix

Statistics	FLPP	AGE	EDU	MAR	DEP	INC
Mean	0.66	28.16	3.09	0.67	2.6	3591500
Std. dev.	0.476	6.704	0.854	0.473	1.110	2808942
Minimum	0	19	1	0	0	0
Maximum	1	40	4	1	5	15000000
Obs	100	100	100	100	100	100
Correlation						
AGE		1.000				
EDU		-0.347	1.000			
MAR		0.514	-0.101	1.000		
DEP		0.138	-0.185	-0.100	1.000	
INC		-0.006	0.238	0.149	0.037	1.000

The correlation matrix shows that the relationships among the independent variables are generally weak to moderate, indicating no serious multicollinearity concerns. The strongest association is between age and marital status ( $r = 0.514$ ), consistent with the expectation that older women are more likely to be married. Education exhibits a moderate negative correlation with age ( $r = -0.347$ ), suggesting that younger respondents tend to have higher levels of education—likely reflecting the recent expansion of educational access in the province.

The number of dependents shows a weak positive correlation with age ( $r = 0.138$ ) and weak negative correlations with both education ( $r = -0.185$ ) and marital status ( $r = -0.100$ ), indicating modest variation in household composition across demographic groups. Family income is weakly and positively correlated with most variables, particularly education ( $r = 0.238$ ), implying that households with more educated members tend to earn higher incomes.

As all correlation coefficients are well below the conventional threshold of 0.80, the explanatory variables do not exhibit strong linear relationships. This finding confirms their suitability for inclusion in the binary logistic regression analysis.

**Model evaluation and diagnostic tests**

Before interpreting the estimated coefficients of the logit model, it is essential to assess its adequacy and predictive performance. Model evaluation and diagnostic tests were conducted to ensure that the specified logit model appropriately represents the data and yields statistically reliable estimates. These procedures assess the model’s goodness-of-fit, predictive accuracy, and ability to distinguish between women who participate in the labor force and those who do not. A summary of the evaluation results is presented in Table 4 and further illustrated in Figure 2.

Table 4 reports the model fit statistics and classification performance of the logit estimation used to examine the determinants of female labor force participation in the Bangka Belitung Islands Province. The Likelihood Ratio (LR) Chi-square value of 20.49, with a significance level of 0.004, indicates that the explanatory variables jointly have a

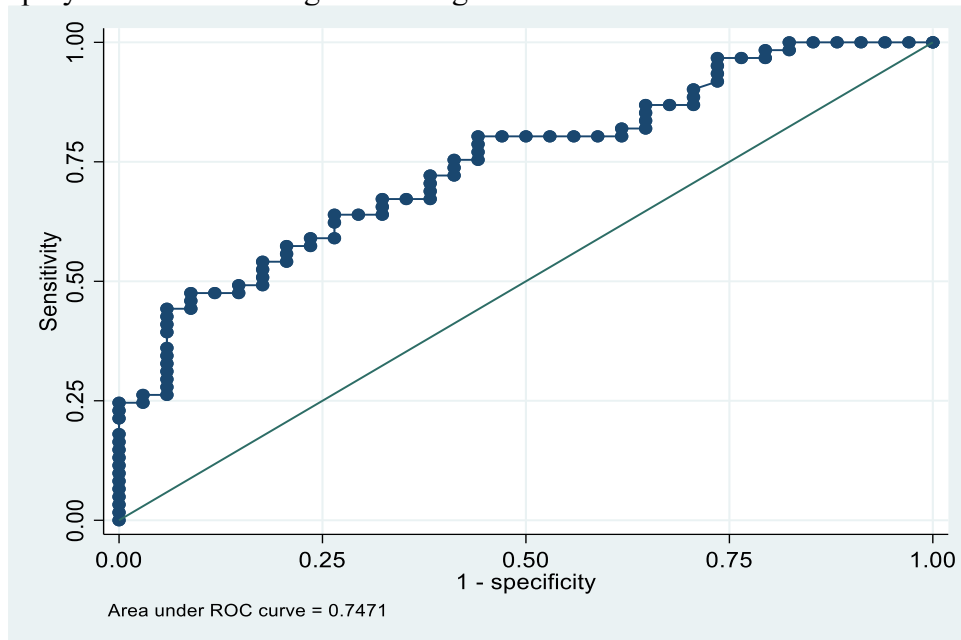
statistically significant effect on the probability of women participating in the labor market.

**Table 4.** Model fit and classification performance

Measure	Value
Log-Likelihood (Intercept Only)	-61.96
Log-Likelihood (Full Model)	-51.714
LR Chi-square (5)	20.49
Prob > Chi <sup>2</sup>	0.004
McFadden’s R <sup>2</sup>	0.165
Cragg & Uhler’s R <sup>2</sup>	0.266
AUC (Area Under ROC Curve)	0.7471
Correctly Classified (%)	66.32

The McFadden’s R<sup>2</sup> value of 0.165 suggests that the model explains approximately 16.5 percent of the variation in female labor force participation. Although this value may appear modest, it is generally considered acceptable for binary outcome models based on cross-sectional socio-economic data. Similarly, Cragg and Uhler’s R<sup>2</sup> of 0.176 indicates a moderate level of explanatory power. The classification results show that the model correctly predicts 66.32% of observations, indicating a reasonably satisfactory level of predictive accuracy.

Figure 2 presents the Receiver Operating Characteristic (ROC) curve, with an Area Under the Curve (AUC) value of 0.7471. According to the criteria proposed by Hosmer et al. (2013), an AUC value between 0.7 and 0.8 indicates good discriminative ability. This finding demonstrates that the model can reliably differentiate between employed and non-employed women in Bangka Belitung Province.



**Figure 2.** ROC curve of the logit model for female labor force participation in Bangka Belitung Islands Province

Overall, the diagnostic results confirm that the model is statistically significant and exhibits adequate explanatory and predictive performance, thereby supporting its suitability for further interpretation and discussion.

**Logit model estimation results**

The results of the binary logit model presented in Table 5 provide empirical evidence on the determinants of women’s labor force participation in the Bangka Belitung Islands Province. Overall, the model is statistically significant, indicating that the explanatory variables jointly account for variations in women’s labor market participation. The findings are broadly consistent with labor supply theory, which highlights the importance of human capital and household economic conditions in shaping women’s employment decisions.

**Table 5.** Logit estimation results of female labor force participation

FLPP	Coefficient	Std. err.	z	Odds ratio
AGE	-0.0279	0.0494	-0.57	0.972
EDU				
Primary School	-1.2773	0.9745	-1.31	0.279
Junior High School	-3.7104***	1.2542	-2.96	0.024
Senior High School	-0.7927	0.5922	-1.34	0.453
MAR	-0.0137	0.7189	-0.02	0.986
DEP	-0.1718	0.2679	-0.64	0.842
ln_INC	-1.0891**	0.4382	-2.49	0.336
Constanta	19.0093***	6.9386	2.74	1.80e+08

*Note: \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels, respectively.*

Education, specified as a set of dummy variables with tertiary education as the reference category, emerges as a significant determinant of women’s labor force participation. The results indicate that women with junior high school education are significantly less likely to participate in the labor force compared to those with tertiary education, with an odds ratio of 0.024. This implies that women who have completed junior high school have approximately 97.6 percent lower odds of participating in the labor market than women with higher education. This finding suggests that junior high school education may not provide sufficient human capital to access available employment opportunities, reflecting the limited alignment between this level of education and the economic structure of Bangka Belitung.

Household income contributed by other family members (ln\_INC) also exerts a statistically significant effect on women’s labor force participation at the 5 percent level. The estimated odds ratio of 0.336 indicates that higher non-labor household income substantially reduces the likelihood that women will engage in paid employment. This result supports the presence of an income effect, whereby increased household economic resources diminish the necessity for women to participate in the labor market.

The remaining explanatory variables do not exhibit statistically significant effects and are therefore not discussed further.

**Discussion**

The logistic regression results provide empirical evidence on the determinants of women’s labor force participation in the Bangka Belitung Islands Province. The findings indicate that education and household income play central roles in shaping women’s participation decisions. In contrast, age, marital status, and the number of dependents do not exert statistically significant effects. These results suggest that women’s labor supply behavior in the study area is driven primarily by human capital endowments and household economic conditions rather than by demographic characteristics alone.

Education emerges as a key determinant of women’s labor force participation when

specified as a set of categorical dummy variables. Using tertiary education as the reference category, the results show that women with junior high school education are significantly less likely to participate in the labor market. This finding indicates that a junior high school education does not provide sufficient human capital to meet the requirements of available jobs in the local labor market. In Bangka Belitung, where employment opportunities are concentrated in services, administration, and skill-intensive activities, limited educational attainment restricts women's access to stable, productive employment. This result is consistent with human capital theory, which posits that education enhances productivity and employability (Becker, 1993; Mincer, 1974), and aligns with empirical evidence demonstrating that low levels of education are often insufficient to support female labor market participation in developing regions (Heath & Jayachandran, 2017; Kingdon & Unni, 2001).

By contrast, primary and senior high school education do not exhibit statistically significant effects relative to tertiary education. This does not imply that education is unimportant; rather, it suggests that, in this specific context, these levels of education do not generate sufficiently strong differentiation in women's employment prospects. One possible explanation is that women with primary or senior high school education are more likely to be absorbed into informal or family-based economic activities, where participation is only weakly associated with formal educational credentials. Consequently, differences in participation across these education groups may not be statistically discernible, despite theoretical expectations of positive effects.

Household income contributed by other family members has a statistically significant negative effect on women's labor force participation, supporting the income effect hypothesis derived from labor supply theory. Higher non-labor household income reduces the necessity for women to engage in paid employment, as basic consumption needs can be met without additional earnings from female labor. This finding is consistent with previous studies showing that women are more likely to withdraw from the labor market as household financial resources increase (Contreras & Plaza, 2010; Sasongko et al., 2020). In Bangka Belitung, where extended family support systems and income sharing are common, this income effect appears particularly salient.

In contrast to theoretical expectations, age, marital status, and the number of dependents do not have statistically significant effects on women's labor force participation in this study. From a labor supply perspective, these variables are typically expected to influence participation through life-cycle dynamics, household responsibilities, and caregiving burdens. However, their lack of significance in this context suggests that such demographic factors do not independently shape women's participation decisions once education and household income are controlled for. One possible explanation is that women across different age groups and marital statuses encounter similar structural constraints in the local labor market, including limited job opportunities and a high prevalence of informal employment. As a result, demographic differences may not translate into measurable differences in participation.

Moreover, prevailing social norms and family arrangements in Bangka Belitung may attenuate the anticipated effects of marital status and household dependency. Women's employment decisions are often negotiated within the household and shaped by collective strategies rather than by individual characteristics alone. This finding supports arguments in the literature that, in many developing and resource-based regions, women's labor supply cannot be fully explained by standard demographic variables and must instead be understood within a broader socio-cultural and institutional framework

(Rubery & Rafferty, 2013; Verick, 2014).

From a policy perspective, these findings underscore the importance of strengthening women's human capital as a pathway to increasing labor force participation. Expanding access to higher education and improving the quality of post-secondary and vocational training may enhance women's employability in the local labor market. At the same time, policies aimed at promoting women's participation should account for the income effect by fostering employment opportunities that offer flexibility and compatibility with household responsibilities. In the context of Bangka Belitung, economic diversification toward services, creative industries, and digital-based sectors may generate more inclusive employment opportunities for women. Ultimately, increasing female labor force participation requires not only investment in education but also structural reforms that expand suitable employment opportunities and address social constraints on women's work.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

This study examines the determinants of women's labor force participation in the Bangka Belitung Islands Province using a binary logistic regression approach. The results indicate that education and household income are the most influential factors shaping women's decisions to engage in paid employment. In particular, women with junior high school education are significantly less likely to participate in the labor force than women with tertiary education, highlighting the importance of higher educational attainment in improving access to employment opportunities. This finding underscores the central role of human capital in enabling women to enter and remain in the labor market, particularly in regions with limited formal employment opportunities.

At the same time, household income contributed by other family members exerts a statistically significant negative effect on women's labor force participation. This result suggests that greater household financial resources reduce the economic necessity for women to engage in paid work, indicating an income effect in women's labor supply decisions. In contrast, demographic characteristics such as age, marital status, and the number of dependents do not exhibit statistically significant effects. This indicates that, in the context of Bangka Belitung, women's labor market participation is shaped more by economic capacity and access to human capital than by household composition or life-cycle factors.

These findings contribute to the literature on labor supply and gender economics by reaffirming the relevance of human capital theory and the labor–leisure framework in explaining women's labor market behavior in developing regions. Empirically, this study provides localized evidence from a resource-based province, demonstrating that female labor force participation patterns differ from those observed in more industrialized or urbanized areas, where demographic factors often play a more prominent role.

### **Recommendations**

Based on these findings, policymakers in the Bangka Belitung Islands Province should prioritize strategies that strengthen women's access to higher education, vocational training, and skills development aligned with local labor market demands. Enhancing educational quality and expanding post-secondary and technical training opportunities may improve women's employability and facilitate their transition into more stable, productive employment.

In addition, labor market policies should account for the influence of household income on women's participation decisions. Expanding flexible work arrangements, supporting home-based and digital employment opportunities, and promoting women's entrepreneurship may help women balance household responsibilities with economic activities. Strengthening institutional support—such as accessible childcare services and legal protections for part-time or informal workers—would further reduce barriers to participation.

At a broader level, regional development strategies should incorporate gender-responsive labor policies into efforts to diversify the local economy beyond resource-based industries. Coordinated initiatives involving government agencies, educational institutions, and the private sector are essential to fostering inclusive labor markets that fully utilize women's skills and capabilities. Future research should incorporate socio-cultural and institutional dimensions—such as gender norms, workplace conditions, and access to digital employment—to provide a more comprehensive understanding of women's labor market behavior across different regional contexts and to support the formulation of more effective and inclusive labor policies.

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Project Administration: Ayu Wulandari, Ineu Sulistiana.

Funding Acquisition: Ayu Wulandari.

### **CONFLICT OF INTEREST**

The authors declare no conflict of interest.

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