Factors Influencing the Decision to Work of Female Workers in the Bangka Belitung Islands Province

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Abstract. This study aims to identify and analyze the factors that influence female labor force participation in Bangka Belitung Islands Province. The method used is binary logistic regression to evaluate the influence of independent variables such as age, education, marital status, number of dependents, and family income on women's decision to work or not work. Primary data were obtained from a survey of 100 female labor force respondents, who were taken stratified from the female labor force population in Bangka Belitung. The results show that education is a significant factor influencing female labor force participation. Women with a higher level of education have a 2.03 times greater chance of working compared to those with lower education. In contrast, the variables of age, marital status, number of dependents, and family income do not have a significant influence on women's decision to work. This shows the important role of education in increasing women's participation in the labor market, while other socio-demographic factors have less impact. This study provides policy implications for the government to focus on improving access to education for women to increase their participation in the economy, which in turn can support sustainable and equitable economic growth in Bangka Belitung.

Keywords: Labor Force Participation, Women, Education, Logistic Regression, Bangka Belitung.

1 Introduction

Labor has a very important role and position as an actor and goal in national development. In the development process, the participation of labor determines the progress of development in a country. Labor as one of the economic factor inputs has an important role in achieving the planned goals. Labor in this case is a person or human who works both individually and in groups by using their abilities to achieve maximum business results.

According to the Law of the Republic of Indonesia Number 13 of 2003 concerning Manpower, what is meant by employment is all matters relating to Manpower at the time before, during, and after the working period and labor is every person who is able to carry out work in order to produce goods and / or services both to meet their own needs and for the community [8]. Labor can be divided into two groups, namely the

labor force and non-labor force groups. The labor force group is the working-age population who participate in the labor market, where this group is further divided into two groups, namely the working and unemployed groups or are looking for work. Meanwhile, the non-labor force group is divided into three groups, namely the schooling group, taking care of the household (MRT), and the last is the group that receives income. Although this group does not work, they are physically and mentally capable of working and can enter the labor force at any time, so this group is also referred to as the Potential Labor Force.

Bangka Belitung Islands Province (Babel) is one of the regions in Indonesia that has abundant natural resources, especially in the mining, fisheries, and tourism sectors. Despite this, economic development and labor force participation in the province are still the focus of attention. A high participation rate can contribute significantly to increasing economic productivity and community welfare. In 2022, Bangka Belitung Islands Province was recorded as the province with the third lowest labor force participation rate according to provinces in Sumatra. This can be seen in the following figure:
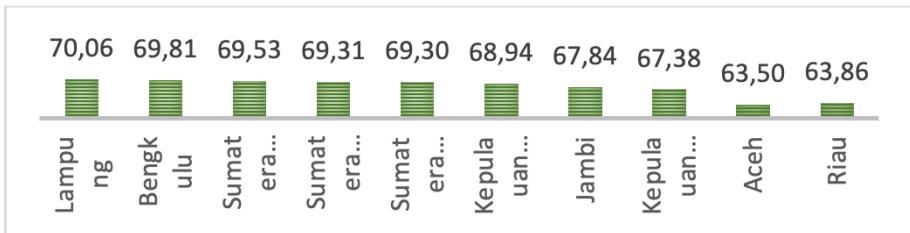

Fig. 1. Labor Force Participation Rate by Province in Sumatra

Based on Figure 1 it can be seen that in 2022 out of 10 provinces in the Sumatra region, Bangka Belitung Islands Province has a Labor Force Participation Rate at number eight with a value of 67.38, which means that out of 100 people of productive age (15 years and over) there are 67 to 68 people active in economic activities. This figure has increased compared to 2021, which shows a value in the range of 65.88 percent. One of the causes of the increase in TPAK in 2022 is the tendency for the working-age population to increase as the population increases [6]. The low Labor Force Participation Rate among provinces in the Sumatra region is one of the important issues in economic development in the Bangka Belitung Islands Province. Therefore, it is necessary to develop the potential of human resources, especially the labor force, not only the male labor force but also women in Bangka Belitung Province so that it is expected to increase economic development.

The increasing involvement of women in economic activities can be influenced by social, economic and demographic factors. Some demographic factors that are considered important are age, education and marital status [9]. The level of women's labor force participation is generally influenced by changes in the economic structure that occur in the development process, so that women's labor contributes to increasing household and community income and welfare.

The participation of women in economic activities is not something new. Women try to get a job to earn income for several reasons, including the willingness of women to be independent in the economic field, namely trying to finance their own needs and possibly also the needs of those who are dependent on their own income. Then, there is also the need to increase family income. The expansion of job opportunities that absorb female labor is also one of the factors driving women to work [7].

This study aims to identify and analyze the factors that determine female labor force participation in the Bangka Belitung Islands Province using the Binary Logit Method. With an in-depth understanding of these determinants, it is expected to provide input for the government, non-governmental organizations, and other stakeholders in designing more effective policies to further increase female labor force participation and improve economic welfare in this region. Through this research, it is also hoped that concrete solutions and policy recommendations can be found to increase women's labor force participation in the Bangka Belitung Islands Province, so as to support sustainable and equitable economic growth in all levels of society.

2   Research Method

This research was conducted in Bangka Belitung Islands Province with the scope of analyzing the Determinants of Female Labor Force Participation using the Binary Logit Method. Primary data sources in this study were obtained through surveys, documentation and interviews (indept interviews) to research respondents. The population used by this research is the female labor force in the Bangka Belitung Islands Province with a total of 262,428 people. The sample is part of the number and characteristics possessed by the population unit or it can be said that the sample is a small part of the population taken through certain procedures that can represent the population used. The sample serves as a validity of the research results conducted in quantitative research [3]. The sample in this study was calculated from the total population using the Slovin formula so that a total sample of 100 respondents was obtained by sampling using the stratified sampling method in each district / city.

The analysis carried out in this study is quantitative descriptive analysis. Quantitative descriptive research method according to Martono [3] is a way or method that aims to make a picture or descriptive of a situation objectively using numbers, starting from data collection, interpretation of the data and appearance and results. This research sees a picture of the phenomenon, the description of activities is carried out systematically and emphasizes more on factual data. In early research, logistic regression analysis was carried out. According to Ghozali [2] logistic regression analysis is a regression that tests whether there is a probability that the dependent variable can be predicted by the independent variable. Logistic regression analysis does not require a normal distribution in the independent variables. Therefore, logistic regression analysis does not require a normality test, heteroscedasticity test, and classical assumption test on the independent variable. The model in this study is as follows:

$$Ln\left(\frac{TPAKP}{1-TPAKP}\right) = \beta_0 + \beta_1\,USIA + \beta_2 PDDK + \beta_3\,SP + \beta_4\,JT + \beta_5\,INC + \mu$$

Description:

TPAKP : Female Labor Force Participation Rate (Decision to work)
AGE   : Age
PDDK   : Education
SP   : Marital Status
JT   : Number of Dependents
INC   : Family Income

The purpose of this test is to identify variables that are able to distinguish between two different groups (decision to work or not to work). In logistic regression the dependent variable is a dummy, i.e., P = 1 = working and P = 0 = not working. The variables of age, education, status, number of dependents and family income are used as independent variables to see their influence on the decision of the female labor force to keep working or not working.

3   Results and Discussion

3.1   Assessing the Feasibility of the Regression Model / Model Fit Test

The feasibility of the regression model in this study was assessed using the model fit test, namely Hosmer and Lemeshow's Goodness of Fit test. Hosmer and Lemeshow's Goodness of Fit test tests the null hypothesis that the empirical data fits or fits the model (there is no difference between the model and the existing data so that it can be said to be fit). The following is the hypothesis:

- H0 : The model fits / fit
- H1 : The model does not fit / does not fit

The results of Hosmer and Lemeshow's Goodness of Fit test can be seen in the following table:

Table 1. Model Fit Test

Description	Value
H-L Statistic	4.8559
Andrews Statistic	6.3015
Prob. Chi-Sq (8)	0.7729
Prob. Chi-Sq (10)	0.7893

Based on the regression results, it is obtained that the statistical value of Hosmer and Lemeshow's Goodness of Fit with a probability of significance ρ-value/sign = 0.7729> alpa 0.05, it can be concluded that the model is able to predict the observation value or in other words the model can be accepted because it matches the observation data.

3.2   Pseudo R-Square

Table 2. Pseudo R-Square

Description	Value
McFadden R-squared	0.111351

The pseudo R-squared value in this model is 0.111351, meaning that 11.13 percent of the variation that occurs in Y can be explained by the variables in the model, while the rest is explained by other variables outside the model.

3.3   Model accuracy test

Table 3. Model accuracy test

	Estimated Equation		
	Dep=0	Dep=1	Sum
E (# of Dep=0)	15.33	19.67	35.00
E (# of Dep=1)	19.67	45.33	65.00
Total	35.00	65.00	100.00
Correct	15.33	45.33	60.67
% Correct	43.81	69.74	60.67
% Incorrect	56.19	30.26	39.33
Total Gain*	8.81	4.74	6.17
Percent Gain**	13.55	13.55	13.55

The percentage of model accuracy that can predict correctly is 43.81 percent (Sihombing, 2022).

3.4   Simultant Test

Table 4. Simultant Test

Description	Value
McFadden R-squared	0.111351
Prob. (LR statistic)	0.013157

The prob value of 0.013157 <0.05, then H1 is accepted, meaning that the model is fit or at least 1 variable has an effect.

3.5   Partial Test

This test is conducted to determine the effect of each independent variable on the independent variable partially.

Table 5. Partial Test

Variable	Coefficient	Std. Error	Z-Statistic	Prob.	Odd Ratio
C	0.434729	1.641484	0.264839	0.7911	-
USIA	-0.009096	0.042559	-0.213734	0.8308	0.99
PDDK	0.705985	0.302520	2.333682	0.0196	2.03
SP	-0.552966	0.625546	-0.883973	0.3767	0.58
JT	-0.294593	0.228409	-1.289762	0.1971	0.74
INC	-1.44E-07	8.31E-08	-1.727138	0.0841	1.00

The results of the partial influence test are as follows:

$$Ln\left(\frac{TPAKP}{1-TPAKP}\right) = 0.434729 - 0.009096\ USIA + 0.705985\ PDDK - 0.552966\ SP - 0.294593\ JT - 1.440007\ INC$$

According to Shidiq and Raharjo [5], a negative coefficient value indicates a probability of 0, while a positive coefficient indicates a probability of 1.

1. The age variable (AGE) with a significance / ρ value of 0.8308 (greater than the value of α = 0.05) indicates that there is not enough evidence to state that age has a significant effect on the decision to work. In general, in many other studies, age is often associated with labor force participation, where productive age (between 25-45 years old) usually shows higher participation rates. As in research conducted by Prastyadewi [4] that age affects the level of participation of the female labor force, especially respondents who are in the age group 25 to 34 years are productive age. However, in the context of this study, it is likely that age is not the dominant factor influencing women's participation. This could be because other factors such as education or domestic roles are more dominant in this region, so the age difference does not really influence the decision to work. Local socio-economic conditions, including household responsibilities, may be more powerful in determining whether a woman decides to work or not, without being overly dependent on age.

2. The education variable (PDDK) with a probability significance of 0.0196 (smaller than the value of α = 0.05) shows that the education variable has a real effect on the respondent's decision to work. A positive coefficient means that educated respondents are more likely to work than respondents with lower education. The odd ratio value of 2.03 indicates that the chance of someone with a higher education to work is 2.03 times that of someone with a lower education, assuming other variables are constant. This condition indicates that the higher one's education, the more likely one is to work. Education is one of the factors that influence women about their desired occupation. There is a tendency that the higher the education, the more likely it is to work in the formal or modern sector. In addition to socioeconomic status, theoretically education as one of the human capitals for women will increase the demand and supply of their labor. Education can improve a woman's status, abilities and skills, which in turn will increase her ability to compete for her services in the labor market. Education is also seen by Baroleh as a pure propensity to enter the labor market and as a factor that influences the 'appetite' for labor market participa-

tion. Ariyanto [1] stated about his research on the return value of education to income. According to him, education has a positive correlation with the level of workers' income. Workers with a high level of education tend to have high productivity as well. With a high level of productivity, the worker will make a large contribution to the company. This contribution will make the company pay the worker higher.

3. The marital status variable (SP) with a significance/ ρ value of 0.3767 (greater than the value of $\alpha = 0.05$) indicates that there is insufficient evidence that marital status has a significant effect on the decision to work. In many studies, marital status is often considered as one of the factors that influence the decision to work, where married women tend to have greater household responsibilities, thus reducing the desire or need to work. However, in the context of this study, marital status did not have a significant effect. This may be due to social or economic adjustments in the Bangka Belitung region, where married women may not be expected to leave the labor force or are used to having a dual role (taking care of the household and working).

4. The variable Number of dependents (JT) with a significance/ ρ value of 0.1971 (greater than the value of $\alpha = 0.05$) indicates that there is not enough evidence to state that the number of dependents has a significant effect on the decision to work. The number of family dependents is often assumed to influence women's decision to work, as the more dependents, the more women may be encouraged to work to increase family income. However, the results of this study show that there is insufficient evidence to support this assumption. This could be due to the income level or family structure in this region, where families may be more dependent on the husband's income or other sources of income, so the number of dependents does not have much impact on a woman's decision to work.

5. The family income variable (INC) with a significance/ ρ value of 0.0841 (greater than $\alpha = 0.05$) indicates that there is insufficient evidence that family income has a significant effect on the decision to work. Family income is usually considered as one of the important factors in women's decision to work. The lower the family income, the greater the incentive for women to work to increase their income. However, in this study, family income did not significantly influence women's decision to work. This may be due to the presence of other factors such as more dominant education or even culture and social norms in Bangka Belitung that make women less encouraged to work despite low family income.

4   Conclusions

Based on the description of the results and discussion, it can be concluded that the factor found to have a significant effect on the decision to work on the female workforce is the level of education, which shows that the higher the education, the more likely women are to participate in economic activities. This result shows the importance of increasing education for women to increase their participation in the economy. On the other hand, age, marital status, number of dependents, and family income showed no statistically significant influence on women's decision to work.

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