Analysis of Determinants Influencing The Labor Force Participation Rate (LFPR) of Women in East Java Province For The Years 2018-2022

Nurul Cholifah[1], Sutrisno[2]

[1]Development Economics, Faculty of Economics, Bojonegoro University, East Java Province, Indonesia
[2]Development Economics, Faculty of Economics, Bojonegoro University, East Java Province, Indonesia

Email: nurulk927@gmail.com

Abstract: *The role of women is not only to be a wife and housewife, but their existence can provide its color in economic activities. This research aims to analyze of determinants influencing the labor force participation rate of women in East Java Province for the years 2018-2022. This research consisted of 38 regencies/cities in East Java Province over 5 years so there were 190 observations, obtained from the Central Statistics Agency (BPS). This research method uses quantitative analysis with panel data regression. The research results show that the best model is the Fixed Effect Model. Partially, women's per capita expenditure (X1) has a positive and insignificant effect on the labor force participation rate of women (Y). The average number of years of schooling for women (X2) has a positive and significant effect on the labor force participation rate of women (Y). The minimum wage in districts/cities (X3) has a negative and insignificant effect on the labor force participation rate of women (Y). Gross Regional Domestic Product (X4) has a negative and significant effect on the labor force participation rate of women (Y). Simultaneous research results in women's per capita expenditure (X1), average years of schooling for women (X2), minimum wage in districts/cities (X3), and Gross Regional Domestic Product (X4) together have a significant effect on the labor force participation rate of women (Y). As the number of labor force participation rate of women increases every year, it is hoped that the development strategy in East Java District/City will move towards a strategy that prioritizes improving the quality of human resources, through soft skills and hard skills training.*

Keywords: Labor Force Participation Rate (LFPR) of Women; Women's Per Capita Expenditure; Average Years of Schooling for Women; Minimum Wage in Districts/Cities; Gross Regional Domestic Product.

INTRODUCTION

The increased role of women in the workforce is one of the factors contributing to the success of human resource development. The labor force participation rate is a benchmark for determining the proportion of the population actively engaged in economic activities in a region (Septiawan & Wijaya, 2020). This makes the labor force participation rate for women distinct in economic activities. Women can play dual roles, not only as wives and homemakers but also as individuals who contribute significantly to their household's economic well-being (Murialti et al., 2022).

According to Beker (1965) as cited in (Guszalina, 2022) the decision to choose to work or not work a woman is based on three things, namely leisure time, paid labor, and unpaid labor. Women who are in leisure time are generally in activities with needs that have been met or the desire to obtain goods and services has been achieved without having to work. Then women who are in paid labor are generally in situations with unmet needs, so they

work to help the economy meet their needs. Meanwhile, women who are in unpaid labor generally work voluntarily, and are in the state of helping the work done by the head of the household, in this case, women maximize their resources in supporting the head of the household at work. From this perspective, women's participation can be a crucial element in gender equality efforts to advance women's roles in the workforce (Zaheer & Qaiser, 2016).

One of the developing countries still facing employment issues is Indonesia, where the number of job opportunities is shrinking compared to the demand for employment (Hidayat et al., 2017). Women's participation in the labor force in Indonesia is also considered to lag behind that of men (Schaner & Das, 2016). The large population in Indonesia contributes to this issue, especially in one of the provinces with the second-largest population, East Java Province (Amalia & Ratnasari, 2013). The significant population in East Java results in a substantial supply of labor force participation. Below is a comparison of the population and labor force participation rate by gender in East Java.
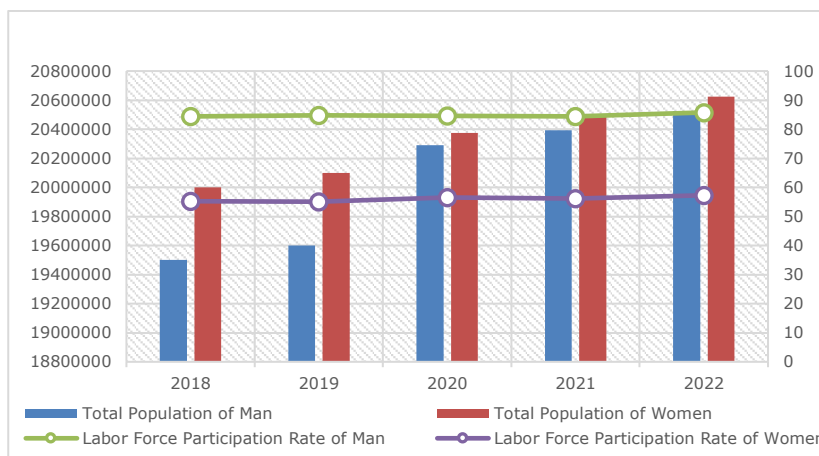

Figure 1. Population and Labor Force Participation Rate (LFPR) According to Gender in East Java Province, Years 2018-2022.
Source: Central Statistics Agency (Data Processed in 2023)

It can be observed from the graph above that the total population of women in East Java consistently increases each year. It was recorded that in 2022 the largest population was dominated by women, which amounted to 20.624.218 million people. The increase in the total population of women is attributed to the higher life expectancy of women compared to men (Dinas Kominfo Provinsi Jawa Timur, 2022). However, this increase in the total population of women is not proportionate to their labor force participation rate.

It is known that each year the labor force participation rate of men is higher compared to women. In the year 2022, the labor force participation rate for men was 85.76 percent, while the labor force participation rate for women was only around 57.28 percent, indicating a significant difference between the labor force participation rates of men and women. By observing this comparison, it is evident that women's involvement in economic activities is still relatively low (Amalia & Ratnasari, 2013). Therefore, it is necessary to identify the factors influencing the labor force participation of women in East Java. Below is the sum of graphs for the variables: women's per capita expenditure, average years of schooling for women, minimum wage in districts/cities, and Gross Regional Domestic Product in East Java Province.
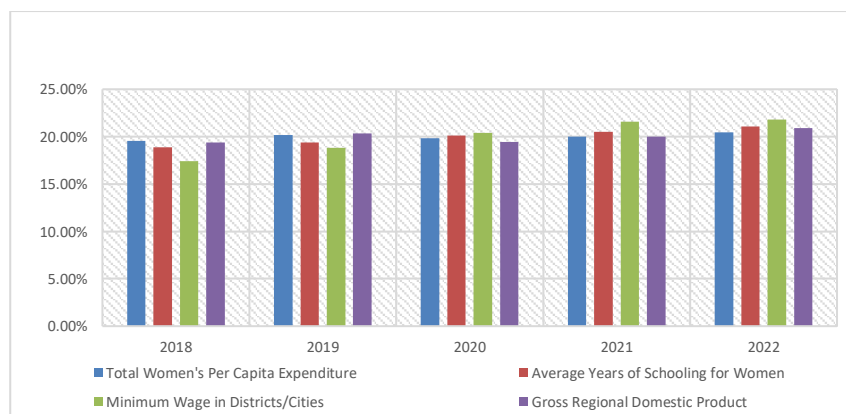

Figure 2. Total Women's Per Capita Expenditure, Average Years of Schooling for Women, Minimum Wage in Districts/Cities, Gross Regional Domestic Product in East Java, Years 2018-2022.
Source: Central Statistics Agency of East Java (Data Processed in 2023)

Per capita expenditure refers to the costs incurred by each family member every month to meet their living needs (BPS Provinsi Jawa Timur, 2022). Based on the graph above, women's per capita expenditure in East Java from 2018 to 2019 has increased. However, it was noted that in 2020 there was a decrease compared to 2019, from 20.16% to 19.84%. The decline in women's per capita expenditure is inseparable from the impact of the COVID pandemic that hit East Java Province. During the pandemic, the economy of East Java experienced a deep contraction, so people tended to reduce their spending and be more careful in using money (Robbi, 2022). This is due to several policies ranging from Large Scale Social Restrictions (PSBB), lockdowns, and the Enforcement of Restrictions on Community Activities (PPKM) causing consumption activities to be hammered (BPS, 2020).

In theory, the ability to fulfill needs is reflected in the expenditure/purchasing power index. The higher this index, the better the purchasing power of the people to fulfill their needs. According to Wasista (2020) as cited in (Pratiwi, 2023) when per capita expenditure increases, it also leads to an increase in the demand for goods/services, which can have an impact on labor force participation. The rise in per capita expenditure indicates an improvement in the quality of the workforce in terms of a decent standard of living and the well-being of society (Mahfuds & Yuliana, 2022).

Education is also one of the most crucial factors in the labor force participation rate of women. This is important because there must be equal rights in the field of education, especially for women, to prevent discrimination against women that can hinder social inequality (Josephine, 2019). Based on the graph above, the average years of schooling for women show an increase each year. It is noteworthy that in 2022, the average years of schooling for women in East Java increased by 21.08%. It is evident that if the average years of schooling pursued are higher, it demonstrates an improvement in the quality of one's thinking and actions (Angraini et al., 2022). The development literature also explains that resources dedicated to improving women's educational attainment will increase labor force participation and provide better employment opportunities that can increase productivity and income (Wei & Cinn, 2021).

According to Borjas (2013) as cited in (Maulana et al., 2022) the theory of human capital asserts that education is an investment that will be valuable in the future. This investment in education is believed to enhance one's thinking patterns and stimulate creativity, enabling its application when entering the labor market (Fajar & Mulyanti, 2019). The level of education, assumed by the average years of schooling pursued, is presumed to create a highly skilled human resource (Arifin, 2023). Ultimately, this provides opportunities for obtaining suitable employment and income. This, in turn, can reduce poverty rates and improve economic well-being.

Another factor that can influence the labor force participation rate of women is the minimum wage in districts/cities. Wages represent a right received by workers as a reward for completing their tasks and receiving compensation, which can take the form of a salary or money (Fajar & Mulyanti, 2019). Based on the graph above, it can be observed that the minimum wage in districts/cities in East Java Province consistently increases each year. In 2022, the minimum wage in districts/cities increased by 21.82%. The increase in the minimum wage in Districts/Cities can stimulate the population to enter the labor market. According to Mankiw (2011) as cited in (Murialti et al., 2022) when the government raises and maintains the minimum wage, it has an impact on increasing labor force participation to enter the labor market.

According to Simanjutak (2001) as cited in (Hardiani et al., 2020) it is stated that a high wage offered will also lead to an increasing number of people willing to work. Conversely, if the wage offered is low, there is a small likelihood that people will be interested in entering the labor market. Based on the efficiency wage theory proposed by Mankiw (2007) as cited in (Nursalamah et al., 2022) it is stated that a significant wage increase can motivate workers to enhance their productivity at work.

Another factor that can also influence the labor force participation rate of women is the Gross Regional Domestic Product. Gross Regional Domestic Product represents the total value added by goods and services produced by various production units in a country's region over a specific period. Gross Regional Domestic Product serves as a crucial indicator in economic activities that generate income to achieve the prosperity of society (Ardella et al., 2019). Based on the data graph above, it is evident that in the year 2020, East Java's Gross Regional Domestic Product experienced a contraction compared to the previous year, with a decline of approximately 19.42%. This decline is attributed to the entry of the COVID-19 pandemic into Indonesia (Bank Indonesia, 2021). The presence of the Covid pandemic has had an impact on the downturn in economic activities (Assidikiyah et al., 2021). It is noted that in the years 2021 and 2022, East Java's Gross Regional Domestic Product began to increase again due to the post-Covid pandemic recovery, indicating an improvement in the economy (Moegiarso, 2023). The increase in Gross Regional Domestic Product is a result of the reopening of productive economic sectors that were previously restricted due to the implementation of large-scale social restrictions and the COVID-19 vaccination efforts to minimize the presence of COVID-19 (Bank Indonesia, 2022).

Based on the theory put forward by Solow which states that economic growth, assumed as Gross Regional Domestic Product can show how capital, labor force growth, and technological progress can increase the level of labor force participation (Tri Nugraha et al., 2023). If the Gross Regional Domestic Product has increased, this is also followed by an increase in the amount of output of goods/services produced (Sakti et al., 2022). This increase will affect labor force participation because a company will increase the number of its workers so that the production produced can also increase its sales result (Septiawan & Wijaya, 2020). It can be said that as the Gross Regional Domestic Product increases, employment opportunities for women also increase.

Several studies on the analysis of determinants influencing the labor force participation rate of women continue to be conducted to obtain empirical results. The results of a previous research conducted by (Kiani, 2021) indicate that women's per capita expenditure has a positive but not significant impact on the labor force participation rate

of women. However, these outcomes contrast with those of (Amalia & Ratnasari, 2013) which show that women's per capita expenditure has a significant impact on the labor force participation rate of women.

Furthermore, the research outcomes conducted by (Septiawan & Wijaya, 2020) (Aprirachman & Nurasia, 2022) indicate that the average years of schooling for women and the Gross Regional Domestic Product have a positive and significant impact on the labor force participation rate of women. However, these results contrast with those of (Norhikmah et al., 2022) and (Utami & Ariusni, 2023) which demonstrate that the average years of schooling for women and Gross Regional Domestic Product have a negative and significant impact on the labor force participation rate of women.

In the context of the minimum wage variable, the research outcomes (Murialti et al., 2022) and (Pujilestari, 2022) indicate that the minimum wage in districts/cities has a positive and significant impact on the labor force participation rate of women. However, these results differ from the research conducted by (Herlina, 2015) which shows that the minimum wage in districts/cities has a positive but not significant impact on the labor force participation rate of women. The existence of this gap in previous research indicates differing outcomes among various researchers, necessitating a reanalysis to determine whether women's per capita expenditure, average years of schooling for women, minimum wage in districts/cities, and Gross Regional Domestic Product have an impact on the labor force participation rate of women. Therefore, the objective of this research is to ascertain the analysis of determinants influencing the labor force participation rate of women in East Java Province for the years 2018-2022.

METHODOLOGY

This research employs quantitative descriptive analysis using secondary data from the Central Statistics Agency (BPS). The technique used for analysis is panel data regression, with the assistance of EViews 10 software. The analysis uses panel data by combining cross-section and time series. This study consists of 38 Districts/Cities of East Java Province observed over 5 years, so 190 observations were obtained. This analysis aims to determine whether women's per capita expenditure (X1), average years of schooling for women (X2), minimum wages in Districts/Cities (X3), and Gross Regional Domestic Product (X4) have an impact on the labor force participation rate (LFPR) of women (Y). The regression model equation for this multiple linear regression analysis can be expressed as follows:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \varepsilon$$

Explanation:
Y	: Labor Force Participation Rate (LFPR) of Women
X1	: Women's Per Capita Expenditure
X2	: Average Years of Schooling for Women
X3	: Minimum Wage in District/Cities
X4	: Gross Regional Domestic Product
i	: Cross-Section
t	: Time Series
β_0	: Constant
$\beta_1, \beta_2, \beta_3, \beta_4$	: Regression Coefficients
ε	: Error Term

Best Model Test

Several testing steps can be carried out to select the best model, including:

1. **Chow Test**
   If the probability of *Cross-section F and Cross-section Chi-square* is > 0.05, the best model is the *Common Effect Model* (CEM). However, if the probability values of *Cross-section F* and *Cross-section Chi-square* are < 0.05, the best model is the *Fixed Effect Model* (FEM).
2. **Hausman Test**
   If the probability value is less than 0.05, the best model is the *Fixed Effect Model* (FEM). However, if the probability value is greater than 0.05, the best model is the *Random Effect Model* (REM).
3. **Lagrange Multiplier Test**
   If different results are found between the Chow test and the Hausman test, the next step is to perform a Lagrange Multiplier test. If the probability value of the Breusch-Pagan test is < 0.05, then the best model is the *Random Effects Model* (REM). However, if the probability value of the Breusch-Pagan test is > 0.05, then the best model is the *Common Effects Model (*CEM).

Classical Assumption Tests

The next step is to perform classical assumption testing to obtain more accurate parameter estimates for the model. These tests include:

1. **Normality Test**
   If the Jarque-Bera probability value is > 0.05, it indicates that the data is normally distributed. However, if the *Jarque-Bera* probability value is < 0.05, it suggests that the data is not normally distributed.

2. **Heteroskedasticity Test**
   If the probability values of each variable are > 0.05, it indicates that the data does not experience heteroskedasticity. However, if the probability values of each variable are < 0.05, it suggests that the data experiences heteroskedasticity.
3. **Multicollinearity Test**
   If the correlation coefficient between independent variables is > 0.90, it indicates multicollinearity in the data. However, if the coefficient between independent variables is < 0.90, there is no multicollinearity in the data.
4. **Autocorrelation Test**
   The decision on the absence of autocorrelation can be determined using the Durbin Watson (DW) table with the condition that DU < DW < 4 - DW.

Statistical Tests

Statistical tests are used to test hypotheses and determine the significance of relationships between variables. The statistical tests conducted in this research cover three aspects, including:

1. **Partial Test**
   A partial test is conducted to assess the significance of the individual influence of independent variables on the dependent variable. If the probability value is < 0.05, then the independent variable (X) has a significant impact on the dependent variable (Y). However, if the probability value is > 0.05, then the independent variable (X) does not have a significant influence on the dependent variable (Y).
2. **Simultaneous Test**
   A partial test is conducted to assess the significance of the combined influence of independent variables (X) on the dependent variable (Y). If the probability value of the F-statistic is < 0.05, then collectively, the independent variables (X) have a significant impact on the dependent variable (Y). Conversely, if the probability value of the F-statistic is > 0.05, then collectively, the independent variables do not have a significant influence on the dependent variable (Y).
3. **Coefficient of Determination (R^2)**
   The Coefficient of Determination (R-squared) is used to measure how well a model explains the variation in the dependent variable. If the value of the coefficient of determination approaches 1, its influence is stronger; however, if the R-squared value approaches 0, its influence is weaker.

RESULTS

Results of Selecting the Best Model

Here are the results of the testing for selecting the best model processed using EViews 10, along with their explanations, including:

Chow Test

Table 1. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	11.448423	(37,148)	0.0000
Cross-section Chi-square	256.730382	37	0.0000

Source: Data processed (2023)

Based on the probability values of *Cross-section F and Cross-section Chi-square* (0.0000 < α = 0.05), the best model in this research is the *Fixed Effect Model* rather than the Common Effect Model.

Hausman Test

Table 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.374900	4	0.0026

Source: Data processed (2023)

Based on the probability value of the *cross-sectional random effect* (0.0026 < α = 0.05), the best model in this research is the *Fixed Effect Model* rather than the Random Effect Model. Therefore, it can be concluded that the results of both the Chow test and the Hausman test indicate that the best model to use in this research is the *Fixed Effect Model.*

Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Keterangan
C	167.0346	112.9851	1.478377	0.1414	
X1	4.113069	39.21252	0.104892	0.9166	Not Significant Effect
X2	69.98453	18.27038	3.830491	0.0002	Significant Effect
X3	-10.01549	9.587006	-1.044695	0.2979	Not Significant Effect
X4	-27.47004	13.84242	-1.984482	0.0491	Significant Effect
		Effects Specification			
		Cross-section fixed (dummy variables)			
R-squared	0.800229	Mean dependent var		57.07121	
Adjusted R-squared	0.744887	S.D. dependent var		4.984848	
S.E. of regression	2.517784	Akaike info criterion		4.876929	
Sum squared resid	938.2072	Schwarz criterion		5.594692	
Log likelihood	-421.3083	Hannan-Quinn criter.		5.167684	
F-statistic	14.45969	Durbin-Watson stat		2.030806	
Prob(F-statistic)	0.000000				

Source: Data processed (2023)

The regression equation model with the Fixed Effect Model is obtained as follows:

$$Y_{it}=167.0346+4.113069 \, X1_{it}+69.98453 \, X2_{it}-10.01549 \, X3_{it}-27.47004 X4_{it}+\varepsilon$$

Here is the interpretation of the equation:

a. The coefficient value (C) of the constant is 167.0346. If the values of Women's Per Capita Expenditure (X1), Average Years of Schooling for Women (X2), Minimum Wages in Districts/Cities (X3), and Gross Regional Domestic Product (X4) are all 0, then the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province will have a value of 167.0346%.
b. The coefficient value of X1 is 4.113069. If there is a 1% increase in Women's Per Capita Expenditure (X1), it will lead to an increase of 4.113069% in the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
c. The coefficient value of X2 is 69.98453. If there is a 1% increase in Average Years of Schooling for Women (X2), it will result in a 69.98453% increase in the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
d. The coefficient value of X3 is -10.01549. If there is a 1% increase in Minimum Wages in Districts/Cities (X3), it will lead to a decrease of -10.01549% in the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
e. The coefficient value of X4 is -27.47004. If there is a 1% increase in Gross Regional Domestic Product (X4), it will result in a decrease of -27.47004% in the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.

Statistical Test

Here are the results of the statistical tests along with their explanations, including:

Partial Test

a. The variable Women's Per Capita Expenditure (X1) yields a coefficient value of 4.113069 with a probability of 0.9166 > α = 0.05. Therefore, partially, Women's Per Capita Expenditure (X1) has a positive but not significant effect on the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
b. The variable Average Years of Schooling for Women (X2) produces a coefficient value of 69.98453 with a probability of 0.0002 < α = 0.05. Hence, partially, Average Years of Schooling for Women (X2) has a positive and significant effect on the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
c. The variable Minimum Wages in Districts/Cities (X3) results in a coefficient value of -10.01549 with a probability of 0.2979 > α = 0.05. Therefore, partially, Minimum Wages in Districts/Cities (X3) have a negative and not significant effect on the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.
d. The Gross Regional Domestic Product (X4) variable has a coefficient value of -27.47004, yielding a probability of 0.0491 < α = 0.05. Therefore, partially, Gross Regional Domestic Product (X4) has a negative and significant effect on the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province.

Simultaneous Test

Based on the results of the simultaneous test, the probability value of the F-statistic is 0.000000 < α = 0.05. This indicates that collectively, the independent variables, namely Women's Per Capita Expenditure (X1), Average

Years of Schooling for Women (X2), Minimum Wages in Districts/Cities (X3), and Gross Regional Domestic Product (X4), have a significant impact on the dependent variable, which is the Labor Force Participation Rate (LFPR) of Women (Y) in East Java Province

Coefficient of Determination (R-squared)

The coefficient of determination (R-square) is 0.800229, indicating that the relationship between Women's Per Capita Expenditure (X1), Average Years of Schooling for Women (X2), Minimum Wages in Districts/Cities (X3), and Gross Regional Domestic Product (X4) with Labor Force Participation Rate (LFPR) of Women (Y) has a strong influence of 80.0229%, while the remaining 19.9771% is explained by other variables outside the model.

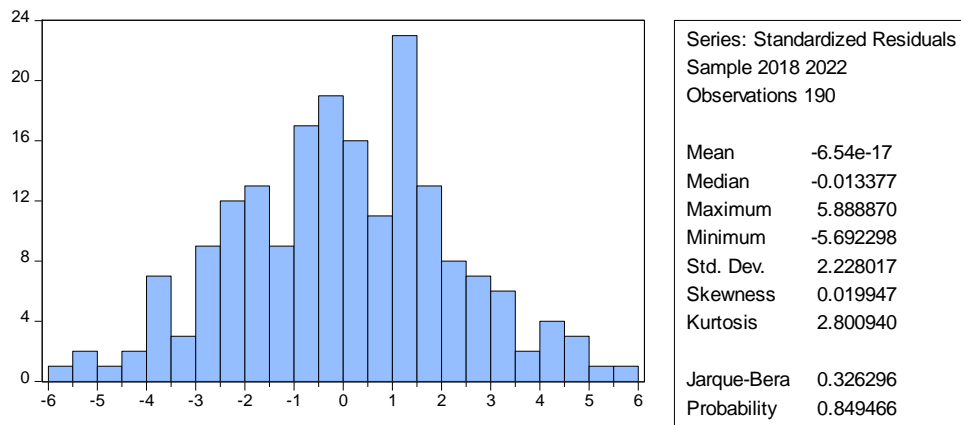**Classical Assumption Test**

Normality Test

Figure 3. Normality Test Results
Source: Data processed (2023)

Based on the results of the normality test, the *Jarque-Bera probability* value was obtained as (0.326296 > α = 0.05), hence it can be concluded that the data follows a normal distribution.

Heteroskedasticity Test

Table 4. Heteroskedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	34.56342	14.51142	2.381809	0.0182
X1	-3.544742	2.924608	-1.212040	0.2270
X2	1.376401	3.861278	0.356462	0.7219
X3	-2.316349	1.963202	-1.179883	0.2396
X4	-0.783142	0.944812	-0.828887	0.4082

Source: Data processed (2023)

Based on the results of the heteroskedasticity test, the probability values for X1 = 0.2270, X2 = 0.7219, X3 = 0.2396, and X4 = 0.4082, for each independent variable, are all > α = 0.05. Therefore, it can be concluded that there is no heteroskedasticity issue.

Multicollinearity Test

Table 5. Multicollinearity Test Results

	X1	X2	X3	X4
X1	1.000000	0.844778	0.327034	0.546912
X2	0.844778	1.000000	0.415535	0.622808
X3	0.327034	0.415535	1.000000	0.576402
X4	0.546912	0.622808	0.576402	1.000000

Source: Data processed (2023)

Based on the results of the multicollinearity test, it was found that the variables X1, X2, X3, and X4 did not exhibit high correlation values among the *independent* variables. The values did not exceed 0.90, indicating that there is no multicollinearity among these four *independent* variables.

Autocorrelation Test

Table 6. Autocorrelation Test Results

Durbin-Watson stat	2.030806

Source: Data processed (2023)

Based on the results of the autocorrelation test, a Durbin-Watson value of 2.030806 was obtained. If the number of independent variables is (k = 4) and the sample size is (n = 190), when looking at the DW table with α = 0.05, the values DU = 1.8057 and 4 - DU = (4 - 1.8057 = 2.1943) are calculated. Therefore, the result is that Du < Dw < 4 - Du (1.8057 < 2.030806 < 2.1943), indicating that there is no autocorrelation issue in the model being used.

DISCUSSION

The Influence of Women's Per Capita Expenditure on the Labor Force Participation Rate (LFPR) of Women in East Java Province

The results of the analysis show that women's per capita expenditure directly has a positive and not significant effect on the Labor Force Participation Rate (LFPR) of Women in East Java Province. This illustrates that an increase in the average years of schooling of women does not lead to an increase in the Labor Force Participation Rate (LFPR) of Women. The results of this study contradict the theory put forward by Keynes, which states that expenditure/consumption depends on the amount of income (Suparmono, 2018). The more people who spend their income, the greater the output of goods/services that will be issued by a company. Keynes also stated that the labor market will only follow what happens in the goods market (Ekawarna & Muslim, 2018). If there is an increase in the output of goods/services produced by a company, this will also encourage a company to increase its labor demand, so that labor participation will increase (Fitriyono & Hadiyanti, 2019).

However, by looking at the current conditions, it turns out that women's per capita expenditure does not influence the Labor Force Participation Rate (LFPR) of Women. The results of this study are supported by research conducted by (Kiani, 2021) which states that when women's per capita expenditure increases, it does not affect the Labor Force Participation Rate (LFPR) of Women. This is because the economic conditions in a family, especially can be seen from the husband's income to meet all the needs in the household, are still quite good in meeting their needs (Kurniawati & Salsasbila, 2021).

The Influence of the Average Years of Schooling for Women on the Labor Force Participation Rate (LFPR) of Women in East Java Province

The results of the analysis show that the average years of schooling of women directly have a positive and significant effect on the Labor Force Participation Rate (LFPR) of Women in East Java Province. This shows that an increase in the average years of schooling of women can affect an increase in the Labor Force Participation Rate (LFPR) of Women. These results contradict research conducted by (Norhikmah et al., 2022) which states that when the average length of schooling increases, the Labor Force Participation Rate (LFPR) of Women rate decreases. The reason is that there is still an assumption about gender discrimination from a long time ago which states that women do not need to get a high level of education because, in the end, women will be in the kitchen, taking care of the household, taking care of children so that makes the level Labor Force Participation Rate (LFPR) of Women decrease (Rahmayani, 2021). As for those who state that women who are highly educated when married to a wealthy family or economically able to meet a need, will allow women to withdraw from the labor market (Chatterejee et al., 2018).

However, by looking at current conditions, it turns out that the average length of schooling influences the level of Labor Force Participation Rate (LFPR) of Women. The results of this study are in line with human capital theory which states that education is the most important factor that can improve mindset and creativity, which in turn will be able to open up opportunities to enter the labor market (Arifin, 2023). This research is also supported by previous research conducted by (Septiawan & Wijaya, 2020) and (Lari et al., 2022), stating that there is no doubt that higher education can play an important role in the Labor Force Participation Rate (LFPR) of Women. Educational attainment can increase women's chances of getting a job, and women who can complete higher education (i.e. university degree) have higher employment opportunities compared to women who never attended school. The attainment of this level of education indicates a better quality of human resources, which is in line with the increase in productivity and skills needed in the labor market. The more women obtain higher education, the greater the opportunity to enter the labor market (Aprirachman & Nurasia, 2022).

The Influence of Minimum Wages in Districts/Cities on the Labor Force Participation Rate (LFPR) of Women in East Java Province

The results of the analysis show that the Minimum Wages in Districts/Cities in East Java Province directly have a negative and not significant effect on the Labor Force Participation Rate (LFPR) of Women in East Java Province. This shows that an increase in the Minimum Wages in District/Cities alone is not able to increase the Labor Force Participation Rate (LFPR) of Women. The results of this study contradict the efficiency wage theory, which states that an increase in the minimum wage can increase the enthusiasm/motivation of workers not to be lazy so that their productivity in producing goods output can increase (Nursalamah et al., 2022). The spirit or motivation to

get a wage is a stimulus for the labor force population to enter the labor market and is expected to increase labor force participation, especially for women.

However, by looking at the current conditions, it turns out that the Minimum Wages in District/Cities do not affect the level of the Labor Force Participation Rate (LFPR) of Women. This result is supported by previous research (Asrahmaulyana, 2022), (Norhikmah et al., 2022) and (Marchingiglio et al., 2019) which state that when the minimum wage is increased the number of male labor force participation rates does not change. This indicates that the number of male labor force participation rates is greater than the number of female labor force participation rates. The existence of a male labor force participation rate that dominates in finding a job, so that indirectly the female labor force participation rate is not influenced by the minimum wage level. The reason why the minimum wage does not have a significant effect is also because, if there is an increase in the minimum wage, it will become a burden for a company to pay for the increasing production costs, so the company's inability causes the company to reduce its labor demand (Ni made Wulan, 2021). So that when there is an increase in wages, employment opportunities also decrease, so women prefer to become housewives (Hatta, 2017). This is why the increase in the minimum wage has little effect on the level of female labor force participation.

The Influence of Gross Regional Domestic Product on the Labor Force Participation Rate (LFPR) of Women in East Java Province

The analysis shows that the Gross Regional Domestic Product in East Java Province has a direct negative and significant effect on the Labor Force Participation Rate (LFPR) of Women in East Java Province. This suggests that an increase in Gross Regional Domestic Product may lead to a decrease in the Labor Force Participation Rate (LFPR) of Women. The results of this study contradict Solow's theory which states that economic growth, in this study assumed as Gross Regional Domestic Product, can show how capital stock growth, labor force growth, and technological progress can interact in an economy and can affect the overall output of goods or services (Tri Nugraha et al., 2023). Where when there is an increase in Gross Regional Domestic Product, it will also increase the output of goods /services issued by a company, which in turn a company will increase its workforce to increase its sales productivity. So that this increase in Gross Regional Domestic Product can also increase the level of the Labor Force Participation Rate (LFPR) of Women.

However, by looking at current conditions, it turns out that the Gross Regional Domestic Product has a significant effect on the level of the Labor Force Participation Rate (LFPR) of Women. This result is supported by previous research conducted by (Wahyuningtias, 2019) which states that the role of technology which is often represented as a machine has shifted the position of human labor, which is why workers/laborers are slowly decreasing. The higher the technology used in the labor market, the higher the Labor Force Participation Rate (LFPR) of Women, so that the unemployment rate created can also be reduced (Fatmawati, 2015). This will lead to a shift that is more capital-intensive than labor-intensive. Even though given that the population is high, an economy that is labor intensive is important to increase the participation of the Labor Force Participation Rate (LFPR) of Women to be active in an economy.

CONCLUSION

The research results conducted on the analysis of determinants influencing the labor force participation rate (LFPR) of women in East Java Province for the years 2018-2022 yielded the best model using the Fixed Effect Model (FEM). Partially, the women's per capita expenditure (X1) has a positive but not significant impact on the Labor Force Participation Rate (LFPR) of Women (Y). In the case of the average years of schooling of women (X2), it has a positive and significant influence on the Labor Force Participation Rate (LFPR) of Women (Y). Furthermore, the minimum wage in Districts/Cities (X3) has a negative and not significant impact on the Labor Force Participation Rate (LFPR) of Women (Y). Lastly, the Gross Regional Domestic Product (X4) has a negative and significant effect on the Labor Force Participation Rate (LFPR) of Women (Y).

As the labor force participation rate (LFPR) of women increases every year, the results of this study can provide advice that it is hoped that the development strategy in the East Java Regency/City in the era of the 4.0 revolution will move towards a strategy that prioritizes improving the quality of its human resources, through soft skills and hard skills training. The existence of soft skills and hard skills training is so that it can create higher quality jobs in the future. Soft skills that must be possessed by the female workforce can be in the form of communication skills, leadership, critical thinking, good problem-solving, time management, innovation, and creativity. Hard skills in the world of work are also needed, such as proficiency in operating computers/laptops and other social media and being good at digital marketing to be able to develop their sales online. For example, when the government wants to organize a cake-making training program, it will not only give training on the process of making good and correct cakes but can also provide training on how to market these cakes innovatively and creatively. So that it will provide an understanding of digital marketing as well and ultimately can increase its income. So this needs to encourage the spirit of entrepreneurship as well to create new jobs.

In addition, the government in achieving its development also prioritizes and expands employment in various sectors, be it agriculture, manufacturing, hospitality, services, or other sectors. The government's role as a regulator can be to formulate regulations governing technology in entering the labor market so that its use can be controlled. So that it uses more human labor than machines to absorb as much labor as possible, especially female labor. So that the East Java government can direct into labor-intensive considering the amount of labor that should be more absorbed than in capital-intensive which uses a lot of machines/technology which will ultimately have an impact on reduced labor force participation.

In the upcoming analysis to be examined, additional independent variables that can influence the labor force participation rate (LFPR) of women may be incorporated. Therefore, the analysis of the research outcomes can serve as a reference for the government to continually enhance the labor force participation rate (LFPR) of women in addressing other employment-related issues.

REFERENCES

Amalia, R., & Ratnasari, V. (2013). Pemetaan dan Pemodelan Tingkat Partisipasi Angkatan Kerja (TPAK) Perempuan di Provinsi Jawa Timur dengan Pendekatan Model Probit. *Jurnal Sains dan Pomits*, *2*(2), 159–164. DOI: 10.12962/j23373520.v2i2.4960

Angraini, S., Bungsu, Anita Putri, N., Lukitasari, I., Bodromurti, W., & Surida, D. (2022). *Pembangunan Manusia Berbasis Gender*. Kementerian Pemberdayaan Perempuan dan Perlindungan Anak (Kemen PPPA). Retrieved from https://www.kemenpppa.go.id/lib/uploads/list/beb58-pmbg-2022.pdf

Aprirachman, R., & Nurasia. (2022). Analisis Faktor-faktor yang Mempengaruhi Penyerapan Tenaga Kerja Wanita Sektor Formal di Provinsi Nusa Tenggara Barat 2019-2021. *Jurnal EK & BI*, *5*(2), 303–310. DOI: 10.37600/ekbi.v5i2.668

Ardella, R., Istiyani, N., & Jumiati, A. (2019). Determinan Tingkat Partisipasi Angkatan Kerja Wanita di Pulau Jawa Tahun 2006-2017. *Jurnal Ekonomi Ekuilibrium (JEK)*, *3*(2), 15–22. Retrieved from https://jurnal.unej.ac.id/index.php/JEK/article/view/19299

Arifin, A. S. (2023). Human Capital Investment: Meningkatkan Daya Saing Global Melalui Investasi Pendidikan. *Jurnal Education and Development*, *11*(2), 174–179. DOI: 10.37081/ed.v11i2.4672

Asrahmaulyana. (2022). Perubahan Tingkat Partisipasi Angkatan Kerja Perempuan dan Bagaimana Dampaknya Terhadap Kemiskinan. *SEIKO : Journal of Management & Business*, *5*(1), 456–469. DOI: 10.37531/sejaman.v5i2.3380

Assidikiyah, N., Marseto, & Sishadiyati. (2021). Analisis Potensi Pertumbuhan Ekonomi Provinsi Jawa Timur (Sebelum dan Saat Terjadi Pandemi Covid-19). *Jambura Economic Education Journal*, *3*(2), 102–115. DOI: 10.37479/jeej.v3i2.11017

Bank Indonesia. (2021). *Laporan Perekonomian Provinsi Jawa Timur 2021*. Kantor Perwakilan Bank Indonesia Provinsi Jawa Timur. Retrieved from www.bi.go.id/id/Publikasi/kajian-ekonomi-regional/jatim/

Bank Indonesia. (2022). Laporan Perekonomian Provinsi Jawa Timur 2022. In *Bank Indonesia*. Kantor Perwakilan Bank Indonesia Provinsi Jawa Timur. Retrieved from https://www.bi.go.id/id/publikasi/laporan/lpp/Pages/Laporan-Perekonomian-Provinsi-Jawa-Timur--Agustus-2022.aspx

BPS. (2020). *Indeks Pembangunan Manusia Provinsi Jawa Timur 2020-2021*. Retrieved from https://jatim.bps.go.id/publication/2021/09/23/6faa1f39610e582c4699b5df/indeks-pembangunan-manusia-provinsi-jawa-timur-2020-2021.html

BPS Provinsi Jawa Timur. (2022). *Indeks Pembangunan Manusia Provinsi Jawa Timur 2022*. Badan Pusat Statistik. Retrieved from https://jatim.bps.go.id/

Chatterejee, E., Desai, S., & Vanneman, R. (2018). Indian Paradox: Rising Education, Declining Women's Employment. *Demographic Research*, *38*(1), 855–878. DOI: 10.4054/DemRes.2018.38.31

Dinas Kominfo Provinsi Jawa Timur. (2022, December 9). *Jumlah Penduduk Jatim 2022 Meningkat 0,68% per tahun*. Dinas Komunikasi dan Informatika Provinsi Jawa Timur. Retrieved from https://kominfo.jatimprov.go.id/

Ekawarna, & Muslim, F. (2018). *Pengantar Teori Ekonomi Makro*. Jakarta: Gaung Persada.

Fajar, C., & Mulyanti, D. (2019). Meningkatkan Taraf Perekonomian dan Kesejahteraan melalui Perencanaan Investasi Pendidikan. *Jurnal Abdimas BSI*, *2*(1), 89–95. DOI: 10.31294/jabdimas.v2i1.4971

Fatmawati, I. (2015). Analisis Pertumbuhan Ekonomi Indonesia Model Solow dan Model Schumpeter. *Jurnal Ilmiah Universitas Brawijaya*, *3*(2), 1–12. Retrieved from https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/1860/1702

Fitriyono, H., & Hadiyanti, S. U. E. (2019). Pengaruh Konsumsi Terhadap Kesempatan Kerja di Provinsi Kalimantan Timur. *Borneo Student Research (BSR)*, *1*(1), 410–416. Retrieved from https://journals.umkt.ac.id/index.php/bsr/article/view/774

Guszalina, S. (2022). Analisis Faktor-Faktor Yang Mepengaruhi Penyerapan Tenaga Kerja Perempuan Di Provinsi Riau. *Jurnal Ekonomi dan Bisnis*, *11*(4), 694–702. DOI: 10.34308/eqien.v11i04.1345

Hardiani, H., Siregar, S., & Zulfanetti, Z. (2020). Analisis Determinan Tingkat Partisipasi Angkatan Kerja Wanita Di Sumatera. *Jurnal Ekonomi dan Pembangunan*, *11*(1), 70–87. DOI: 10.22373/jep.v11i1.78

Hatta, S. H. (2017). Pengaruh Upah Minimum dan Pertumbuhan Ekonomi Terhadap Tingkat Partisipasi Angkatan Kerja Wanita di Kota Makassar. *Universitas Islam Negeri Alauddin Makassar*. Retrieved from http://repositori.uin-alauddin.ac.id/id/eprint/8452

Herlina, E. (2015). Faktor-faktor yang Mempengaruhi Kesempatan Kerja Wanita dan Implikasinya terhadap Kesejahteraan Keluarga di Kabupaten Cirebon. *Jurnal Ekonomi*, *18*(2), 172–207. DOI: 10.37721/je.v18i2.293

Hidayat, M., Sutrisno, & Hadi, M. F. (2017). Analisis Tingkat Partisipasi Angkatan Kerja (TPAK) Perempuan antar Kabupaten di Provinsi Riau. *Media Trend*, *12*(1), 76–89. DOI: 10.21107/mediatrend.v12i1.2541

Josephine, A. (2019). Analisis Faktor-Faktor yang mempengaruhi Tingkat Partisipasi Angkatan Kerja Wanita Indonesia dalam Menyongsong Bonus Demografi Tahun 2010-2017. *Jurnal Ilmiah Universitas Brawijaya*, *8*(1), 1–9. Retrieved from https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/6086

Kiani, A. Q. (2021). Determinants of Female Labor Force Participation. *ASEAN Marketing Journal*, *1*(2), 117–124. DOI: 10.21002/amj.v1i2.1986

Kurniawati, S., & Salsabila. (2021). Faktor Pendorong Motivasi Kerja Wanita Madura Pada Sektor Informal di Pontianak Barat. In *Prosiding Semminar SATIESP*. Universitas Tanjungpura. Retrieved from https://feb.untan.ac.id/wp-content/uploads/2022/03/2.pdf

Lari, N., Awadalla, A., Al-Ansari, M., & Elmaghraby, E. (2022). Determinants of female labor force participation: implications for policy in Qatar. *Cogent Social Sciences*, *8*(1). DOI: 10.1080/23311886.2022.2130223

Mahfuds, I. M., & Yuliana, R. (2022). Analisis Determinan Produktivitas Tenaga Kerja di Indonesia Tahun 2015-2020. *Seminar Nasional Official Statistics 2022*. DOI: 10.34123/semnasoffstat.v2022i1.1444

Marchingiglio, Riccardo, Poyker, & Michael. (2019). The Employment Effects of Gender-Specific Minimum Wage. *Econstor*, *290*, 1–37. Retrieved from http://hdl.handle.net/10419/262692

Maulana, R., Sambodo, H., & Binardjo, G. (2022). Faktor-Faktor yang Mempengaruhi Tingkat Partisipasi Angkatan Kerja di Pulau Jawa. *FORUM EKONOMI: Jurnal Ekonomi, Manajemen dan Akuntansi*, *24*(3), 529–536. DOI: 10.29264/jfor.v24i3.11499

Moegiarso, S. (2023). *Pertumbuhan Ekonomi Tahun 2022 Capai 5,31%, Tertinggi Sejak 2014*. Kementerian Koordinator Bidang Perekonomian Indonesia. Retrieved from https://www.ekon.go.id/publikasi/detail/4904/pertumbuhan-ekonomi-tahun-2022-capai-531-tertinggi-sejak-2014

Murialti, N., Hadi, M. F., & Asnawi, M. (2022). Tingkat Partisipasi Angkatan Kerja Perempuan Di Kabupaten Rokan Hilir (2010-2021). *Jurnal Akuntansi dan Ekonomika*, *12*(2), 229–237. DOI: 10.37859/jae.v12i2.4256

Ni made Wulan. (2021). Pengaruh Upah dan Modal Manusia terhadap Tingkat Partisipasi Angkatan Kerja dan Distribusi Pendapatan Kabupaten/Kota di Provinsi Bali. *E-Jurnal EP UNUD*, *10*(4), 1596–1623. Retrieved from https://ojs.unud.ac.id/index.php/eep/article/view/56052

Norhikmah, P., Farid, F. M., & Lestia, A. S. (2022). Pemodelan Regresi Data Panel Pada Tingkat Partisipasi Angkatan Kerja Perempuan di Provinsi Kalimantan Selatan. *RAGAM: Journal of Statistics & Its Application*, *1*(1), 1–12. DOI: 10.20527/ragam.v1i1.7383

Nursalamah, Jahriza, & Widayatsar, A. (2022). Analisis Pengaruh Upah Minimum Regional, Pendidikan Dan Investasi terhadap Penyerapan Tenaga Kerja di Provinsi Riau Tahun 2005-2019. *Jurnal Pekbis*, *14*(1), 1–9. DOI: 10.31258/pekbis.14.1.1-9

Pratiwi, I. G. A. M. A. M. A. (2023). Analisis Pengaruh Komponen Indeks Pembangunan Manusia terhadap Penyerapan Tenaga Kerja dan Pertumbuhan Ekonomi di Provinsi Bali. *Jurnal Bali Membangun Bali*, *4*(2), 136–152. DOI: 10.51172/jbmb

Pujilestari, T. (2022). Analisis Keputusan Bekerja Tenaga Kerja Perempuan di Jawa Timur. *Indonesian Journal of Human Resource Management*, *1*(1), 1–11. Retrieved from https://pusdiklat.bps.go.id/journal/index.php/smart/article/view/5

Rahmayani, M. (2021). Persepsi Masyarakat Terhadap Pentingnya Pendidikan Tinggi Untuk Kaum Perempuan.

Jurnal Sosial dan Sains, *1*(9), 1031–1038. DOI: 10.36418/sosains.v1i9.169

Robbi, I. (2022). Dampak Covid-19 Terhadap Pengeluaran Konsumsi Rumah Tangga di Jawa Timur (Studi Kasus 38 Kabupaten/Kota). *Cendekia Niaga Journal of Trade Development and Studies*, *6*(2), 101–109. DOI: 10.52391/jcn.v6i2.689

Sakti, M., Saleh, M., & Juliansyah, J. (2022). Pengaruh Produk Domestik Regional Bruto (PDRB) dan Investasi Swasta serta Upah Minimum terhadap Penyerapan Tenaga Kerja. *Kinerja*, *18*(4), 689–694. DOI: 10.30872/jkin.v18i4.10557

Schaner, S., & Das, S. (2016). Female Labor Force Participation in Asia: Indonesia Country Study. In *Asian Development Bank*. DOI: 10.2139/ssrn.2737842

Septiawan, A., & Wijaya, S. H. (2020). Determinan Tingkat Partisipasi Angkatan Kerja Perempuan di Indonesia Tahun 2015-2019 Menggunakan Model Regresi Data Panel. *Seminar Nasional Official Stistics 2020*, 449–461. DOI: 10.34123/semnasoffstat.v2020i1.387

Suparmono. (2018). *Pengantar Ekonomi Mikro*. Yogyakarta: Unit Penerbit dan Percetakan Sekolah Tinggi Ilmu Manajemen YKPN.

Tri Nugraha, H., Muchtar, M., & Sihombing, P. R. (2023). Pandangan Model Dua-Sektor Lewis dan Model Solow terhadap Pertumbuhan Ekonomi Indonesia. *Ecoplan*, *6*(1), 70–77. DOI: 10.20527/ecoplan.v6i1.632

Utami, R. F., & Ariusni, A. (2023). Determinan Partisipasi Pekerja Perempuan Pada Pasar Tenaga Kerja Di Sumatera Barat. *Jurnal Kajian Ekonomi dan Pembangunan*, *5*(1), 55–62. DOI: 10.24036/jkep.v5i1.14421

Wahyuningtias, R. (2019). Analisis Faktor yang Mempengaruhi Tingkat Partisipasi Angkatan Kerja di Pulau Jawa. *Jurnal Ilmiah Mahasiswa (Universitas Brawijaya)*, *7*(2), 1–14. Retrieved from https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/5883

Wei, L. C., & Cinn, L. Y. (2021). A Research on Female Labour Force Participation in Malaysia. *Conference on Management, Business, Innovation, Education and Social Science*, *1*(1), 50–59. Retrieved from https://journal.uib.ac.id/index.php/combines/article/view/4414

Zaheer, R., & Qaiser, S. (2016). Factors That Affect the Participation of Female in Labor Force: A Macro Level Study of Pakistan. *IOSR Journal of Economics and Finance*, *7*(2), 20–24. DOI: 10.9790/5933-0702032024