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Original Article

Factor Analysis of Minimum Wage and Labor Force Participation Rate on Unemployment Rate in Indonesia

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Abstract:

The increasingly massive unemployment rate is a very bad condition for the domestic economy; the role of the government is very important in minimizing unemployment. This condition is a very heavy burden for the community and the government; if it continues, it will continue to impact the decline in people's purchasing power. From this background, the purpose of this research is to analyze directly the minimum wage variable and the level of labor force participation in the unemployment rate, as well as the direct effect of the minimum wage on labor force participation, then the indirect effect of the minimum wage on the unemployment rate through the mediation of the level of labor force participation. The data analysis method used in the research is path analysis on the minimum wage variable, unemployment rate, and labor force participation rate as intervening variables. The results showed that the direct relationship between minimum wage and labor force participation rate had no effect. The direct relationship between minimum wage and unemployment rate had no effect. The direct relationship between the labor force participation rate and the unemployment rate had a positive effect. The indirect relationship between minimum wage and unemployment rate by the mediation dimension of labor force participation rate did not mediate the two.

Keywords: Minimum wage, labor force participation rate, unemployment rate, Indonesia

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Introduction

Economic development is continuously increasing output that creates additional inputs to turn the wheels of a country's economy (Otterby et al., 2024). The results of a country's performance can measure the prosperity and success of economic development

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in a region so that an increase in economic development performance is considered successful; this increase can encourage employment and increase per capita income (Silvie & Hasmarini, 2023). Economic development is one of the main indicators in assessing the economic system's performance, especially in evaluating the impact of implementing economic development in a region or country. If economic growth increases in a region or country, this reflects that the region's economic conditions are progressing positively. The number of unemployed people is still quite high, and the poverty rate and uneven income can mean that a country's economic growth has not been successful (Filiasari & Setiawan, 2021).

Existing job opportunities have not been able to meet the need for work, so the problem of unemployment arises. Unemployment refers to helplessness in earning a livelihood refers to individuals who belong to the labor force and are trying to earn an income, are designing a business, are not actively looking for job opportunities because they feel that opportunities are limited, or have a source of income but have not started it. (Sutranggono et al., 2024). Indonesia's large population is the basic capital of national development. Improper management of the population will cause problems, especially in employment (Khotimah, 2018). The issue of unemployment is highly complex in research and is a crucial problem, as it is related to various economic indicators. Various aspects of the economy determine the amount of unemployment, including the speed of economic expansion in a region, the magnitude of price increases for goods and services, and policies related to labor compensation that are enforced.

Economic studies still debate the impact of minimum wage policy on employment opportunities, prices, and economic growth. Some scholars argue that the relationship between labor demand decreasing as wages rise and labor supply increasing as wages rise leads to conditions where minimum wage levels higher than market prices can trigger an increase in unemployment (Effendy, 2019). The increase in wage standards increases the burden of labor costs, so small companies are forced to lay off some of their workers. As a result, increasing the minimum wage may lead to more unemployment. Wage rigidity is the failure of wages to adjust, which will cause the labor supply to be equal to its demand. (Putra & Hidayah, 2023) Stated that increased employment opportunities can only occur if the wage rate falls. However, if wages are low, people's interest in working will decrease.

The Labor Force Participation Rate (TPAK) is the ratio between the population included in the labor force (working or looking for work) and the total population of working age (N. A. Salsabila et al., 2022). In the success of economic development, one of the potential factors that can increase productivity is the labor factor. Labor is part of the population that can work and contribute to producing goods and services (S. I. Salsabila et al., 2024). The concept of labor can be categorized into labor force and non-labor force. In other words, it can be concluded that the labor force is defined as the productive age of people who are considered capable of working or looking for work (Bicerli & Kocaman, 2019).

Literature Review

Unemployment Rate

Unemployment is when a person in the labor force category does not have a job and is actively looking for work. To measure unemployment in a country, the unemployment rate is usually used, which is the unemployed expressed as a percentage of the total labor force (Badria, 2022). (Lu et al., 2024) Edgar Edwards categorized the various forms of

joblessness, especially those that often occur in developing economies, into the following categories.: (1). Underemployment Underemployment is workers whose number of hours of work is less than they want (most only work daily, weekly or seasonally). (2). Open unemployment refers to individuals who do not have a job or are not engaged in any work activity. Either voluntarily or involuntarily, and they are actively looking for work.

Minimum Wage

It is necessary to provide adequate wages to improve workers' welfare and encourage their participation in increasing production (Shahateet, 2022). There is a relationship between wages and unemployment, where the higher the wages set by the government, the lower the number of people working. If wage standards in an area are inadequate, this could increase unemployment. However, from the employer's side, if wages increase and the costs incurred are quite high, it will increase expenses, so employers will take a labor reduction policy to reduce production costs (Beverly et al., 2024). This will increase unemployment. The wage increase is certainly a joyful thing for workers, but on the other hand, it can be detrimental to employers.

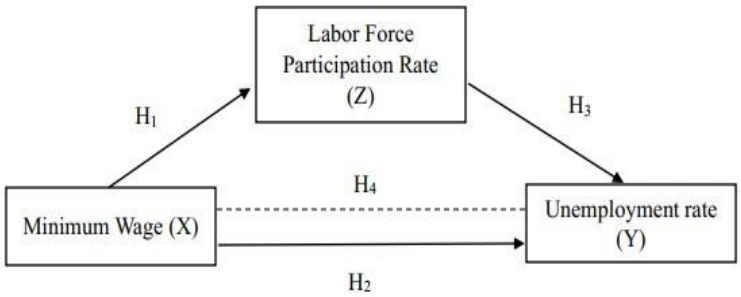
Labor Force Participation Rate

An increase in population will primarily result in a large labor force. This large labor force is expected to spur increased economic activity, which in turn can improve welfare (Prawira, 2018). The labor force participation rate (TPAK) shows the percentage of the working-age population that is active in economic activities in a region, which can provide an overview of the structure and state of the labor force in the future (Sampe et al., 2023).

Methods

This type of research is associative causality research. Associative causality is a quantitative approach to finding the relationship between two or more variables (Arikunto, 2019). The population in the study is macroeconomic factors and the unemployment rate in Indonesia. The sample used in the study is secondary annual data from ten years, namely 2014 to 2023. Sample data was sourced from the internet, papers, books, and other references that support this research.

The method used to analyze the data in this study is path analysis (Gujarathi, 2022). This technique is used to develop multiple linear regression. The regression application aims to estimate the cause-and-effect relationship between variables in a predetermined causal model based on theory (Ghozali, 2018). From the description of the information above, path analysis can be built by examining the relationship of the minimum wage variable (X) to the unemployment rate (Y), as well as the indirect relationship of the minimum wage (X) to the unemployment rate (Y) through the mediating variable labor participation rate (Z):



Source: Data processed by researchers (2025)

Figure 1. Research Design

From the information in the figure above, based on the concept of path analysis in this study, the minimum wage variable (X) has a direct relationship to the unemployment rate variable (Y), as well as the minimum wage (X) to the labor force participation rate (Z), and the direct relationship of the labor force participation rate (Z) to the unemployment rate (Y). Then, the indirect relationship of the minimum wage (X) to the unemployment rate (Y) is mediated by the labor force participation rate (Z).

Results

Table 1. Test Results of Data Normality, Multicollinearity, Heteroscedasticity

Testing	Variables	Asymp. Sig.	Tolerance	VIF	Sig.
Normality		0.157			
Multicollinearity	Minimum Wage		0.867	1.154	
	Labor Force Participation Rate		0.875	1.115	
	a. Dependent Variable: Unemployment rate				
Heteroskedastity	Minimum Wage				0.089
	Labor Force Participation Rate				0.065
	a. Dependent Variable: RES_ABS				

Source: Data processed by researchers (2025)

From the information on the results of the first model feasibility test data normality test in Table 1 above, the Asymp. Sig. in the data normality test of 0.157 is greater than the 5% alpha standard, namely 0.157> 0.05. These results indicate that the data in the study are normally distributed and deserve to be continued at the next stage.

The second model feasibility test, namely the multicollinearity of research data, the tolerance value of the minimum wage variable and labor force participation of 0.867 and 0.875 is greater than alpha 10%, namely 0.867 and 0.875> 0.10, and the VIF value of the minimum wage variable and labor force participation of 1.154 and 1.115 is less than 10, namely 1.154 and 1.115 < 10.00, these results indicate that the research data is not indicated by multicollinearity and is worth continuing to the next stage.

The third model feasibility test is heteroscedasticity. The significance value of the minimum wage variable is 0.089, and the labor force participation variable is 0.065. The significance value of each variable is greater than alpha 5% or 0.05. These results indicate that heteroscedasticity does not indicate the research data and that it is feasible to continue with regression testing and path analysis.

Regression Test Results

Equation 1

Equation 1 is the result of regression with path analysis, namely the direct effect between the minimum wage variable and labor force participation as a mediating dimension variable.

Table 2. Model Summary Results Equation 1

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.365[a]	0.133	0.067	0.011099
a. Predictors: (Constant), Minimum Wage				

Source: Data processed by researchers (2025)

Table 2 above shows that the R-Square value is 0.365 or 36.5%, this information conveys that the minimum wage variable is able to influence the labor force participation variable by 36.5%, so that other variable opportunities can be a reference for research.

Table 3. Regression Equation Results 1

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.559	0.090		6.222	0.000
	Minimum Wage	0.009	0.006	0.365	1.414	0.181
a. Dependent Variable: Labor Force Participation Rate						

Source: Data processed by researchers (2025)

The information in Table 3 above is the result of regression equation 1 partially, with the minimum wage variable's significant value of 0.181> 0.05. These results indicate that the minimum wage variable partially does not affect labor force participation as a mediating variable.

Equation 2

Equation 2 is the result of regression with path analysis, namely the direct influence between the minimum wage variable and labor force participation as a mediating variable on the unemployment rate variable.

Table 4. Results of Model Summary Equation 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.721[a]	0.520	0.439	0.004988
a. Predictors: (Constant), Minimum Wage, Labor Force Participation Rate				

Source: Data processed by researchers (2025)

Table 4 above shows that R-Square has a value of 0.721, or 72.1%. This information conveys that the minimum wage and labor force participation can influence the unemployment rate variable by 72.1%, so other variable opportunities can be a reference

for research.

Table 5. Result of Regression Equation 2

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.334	.080		4.144	0.001
	Labor Force Participation Rate	-0.293	0.125	-0.506	-2.354	0.036
	Minimum Wage	-0.005	0.003	-0.361	-1.678	0.119
a. Dependent Variable: Unemployment rate						

Source: Data processed by researchers (2025)

The information in Table 5 above is the result of regression equation 2 partially with the significant value of the labor force participation variable of 0.036 < 0.05; these results indicate that the labor force participation variable hurts the unemployment rate. Furthermore, the minimum wage variable has a significant value of 0.119> 0.005, and these results indicate that the minimum wage does not affect the unemployment rate.

Sobel Test Results

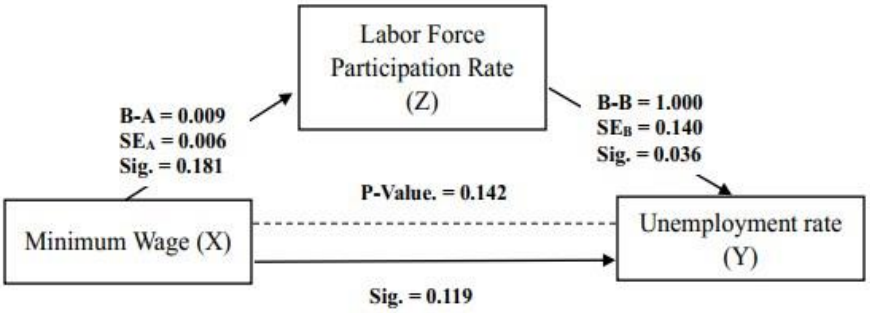
After the equation test is carried out, the test results are continued to the Sobel test. This test is conducted to determine the relationship and influence of the minimum wage variable on the unemployment rate through the labor force participation rate.

Table 6. Sobel Test Results

B - A Minimum Wage	0.009
SE_A	0.006
B – B AK Participation	1.000
SE_B	0.140
Sobel Test Statistic	1.467
Std. Error	0.006
P-value	0.142

Source: Data processed by researchers (2025)

From the information on the results of the soil test in Table 6 above, the path analysis with mediation can produce a P-Value of 0.142 greater than alpha 5%, namely 0.142> 0.05; these results indicate that indirectly the minimum wage variable on the unemployment rate mediated by labor force participation does not mediate the relationship between the two.



Source: Data processed by researchers (2025)

Figure 2. Path Analysis Results

Figure 2 above concludes the results of the stages of testing with path analysis in the study. This visualization shows the results in the testing process along with the results obtained at each stage of testing between the minimum wage variable, the unemployment rate variable, and labor force participation as a mediating variable in the study.

Table 7. Hypothesis Test Results

Variables	Description	Results
Minimum Wage → LFPR	Direct	No effect
Minimum Wage → Unemployment rate	Direct	No effect
LFPR → Unemployment rate	Direct	(+) Significant
LFPR → MW → Unemployment rate	Indirect	No effect

Source: Data processed by researchers (2025)

The information in Figure 7 and Table 5 above summarizes the research hypotheses, such as the results of the first hypothesis test: the effect of the minimum wage directly on the labor force participation rate has no effect. The results of the second hypothesis, which tested the minimum wage directly on the unemployment rate, have no effect. The result of testing the third hypothesis is that the labor force participation rate significantly affects the unemployment rate. The result of testing the fourth hypothesis is that the labor force participation rate does not mediate the relationship between the minimum wage and the unemployment rate.

Discussion

Relationship between minimum wage and labor force participation rate

The results show that the direct effect of minimum wage on labor force participation has no effect. Labor force participation is more influenced by other factors, such as the level of education and the level of education of junior high school, high school, and college, which is a factor that makes the volume of labor force participation rates in each period. Wages only give job seekers many choices when deciding to apply for a job, so the minimum wage variable in the study does not affect the participation rate of the labor force. These findings align with (S. I. Salsabila et al., 2024), which explain that salaries or wages do not affect the size of the labor force; the labor force is generally the final achievement of an individual in the education level. Furthermore, the findings (Badria, 2022) show that the wages of a region do not contribute much to labor force participation in the region but rather the factors of good human resources and optimal education.

Relationship between minimum wage and the unemployment rate

The results showed that the minimum wage did not directly affect the unemployment rate. If the minimum wage is decent or large, it will attract the father of labor in the labor market. However, the phenomenon is different if it occurs in developing countries such as Indonesia. This result is in line with the findings of (Bicerli & Kocaman, 2019). Suppose the wage in a region is high. In that case, it will be the target of job seekers, but, in the current condition, if the wage is too high, there will be employee efficiency, resulting in a reduction and no opening of new employee recruitment. The results (Prawira, 2018) explain that the unemployment rate is not only

due to the high and low wages in a region or country but also from industry absorption of the labor force participation rate. The unemployment rate in Indonesia is more due to the imbalance of the labor force with the growth of domestic industry, so it is not absorbed significantly; this phenomenon is a serious matter that must be taken seriously by the government in the short and long term.

Relationship between Labor force participation rate and the unemployment rate

The results show that the direct effect of the labor force participation rate on the unemployment rate has a significant positive effect. A high labor force participation rate will increase the unemployment rate. Unemployment is a serious problem that is always important in every country. To reduce its broad impact, the labor force participation level must align with a country's industrial growth level. The growth rate of the domestic industry does not accompany the high participation rate of the labor force. This result is in line with the findings of (N. A. Salsabila et al., 2022) that the labor force must be in line with the labor force participation index; if the labor force participation rate continues to increase, it will cause a high unemployment rate. The findings (Effendy, 2019) explain that developing countries are vulnerable to high unemployment rates due to the imbalance of human resource growth and industrial growth rates in developing countries. Moreover, developing countries prioritize short-term needs over long-term needs, so the growth of human resources is not controlled.

Relationship between minimum wage and unemployment rate through mediation of labor force participation rate

The results showed that the indirect effect of minimum wage and unemployment rate mediated by the labor force participation rate variable did not mediate the relationship between the two. The previous finding that the minimum wage does not affect the unemployment rate in Indonesia is due to the contribution of the labor force participation rate, which is the ratio of the labor force to the working-age population, so it is different from the minimum wage set in the regulation which is positive and continues to increase. The unemployment rate is more influenced by the availability of employment factors and the ratio of employers to the population per capita. These results align with the opinion (Khotimah, 2018) that the relationship between wages and unemployment rates is significant if other factors support increased employment and community independence in MSMEs. Then (Silvie & Hasmarini, 2023) expressed the opinion that wages that continue to increase are negative if they are in line with the trend of increasing labor force participation; labor force participation in Indonesia continues to increase and is not balanced with the level of industrial growth and the growth of the ratio of entrepreneurs at this time.

Conclusion

This causality associative research analyzes the causal effect of the variables studied in the research, namely the minimum wage and the unemployment rate, as a mediating dimension on the unemployment rate in Indonesia. The results show that the direct relationship between minimum wage and labor force participation rate has no effect. The direct relationship between minimum wage and unemployment rate has no effect. The direct relationship between labor force participation rate and unemployment rate has a positive effect, and the indirect relationship between minimum wage and unemployment rate by the mediation dimension of labor force participation rate does

not mediate both. The variable labor force participation rate affects the unemployment rate, so any increase in the labor force participation rate in Indonesia affects the increase in the unemployment rate; in this case, the government must try to increase employment to minimize the unemployment rate ratio in Indonesia. The implications of this research, especially for the government, are expected to reduce the unemployment rate by optimizing employment; for academics, it can be a reference for further research with other subthemes related to the unemployment rate in Indonesia for the community, especially young people, must have soft skills such as entrepreneurship in order to create independence from employment.

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