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MINIMUM WAGE POLICY AND HDI IMPROVEMENT AS KEY STRATEGIES TO REDUCE KARANGANYAR'S OPEN UNEMPLOYMENT RATE

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ABSTRACT

Indonesia memiliki kurang lebih 280 juta penduduk dan termasuk salah satu terbesar didunia. Banyaknya jumlah penduduk apabila tidak dikelola dengan benar maka akan menimbulkan permasalahan seperti pengangguran. Berdasarkan kondisi tersebut, Studi ini menyelidiki pengaruh indeks pembangunan manusia (IPM) dan upah minimum kabupaten terhadap tingkat pengangguran terbuka (TPT) di Kabupaten Karanganyar. Metode kuantitatif digunakan dalam studi ini. Data sekunder menggunakan deret waktu BPS dari 2017–2024. Data yang digunakan dalam studi ini dianalisis dengan menggunakan program statistik IBM SPSS Version 26. Hasil analisis menunjukkan bahwa kenaikan upah minimum kabupaten berasosiasi dengan peningkatan signifikan pada TPT, sehingga setiap penambahan upah minimum cenderung mendorong naiknya TPT. Sebaliknya, indeks pembangunan manusia terbukti berpengaruh negatif secara signifikan terhadap TPT, yang mengindikasikan bahwa perbaikan IPM mampu menekan tingkat pengangguran terbuka. Implikasi kebijakan penelitian ini, pemerintah daerah diharapkan dalam penentuan kebijakan mengenai peningkatan upah minimum disertai dengan strategi peningkatan kualitas sumber daya manusia.

Keywords : *Tingkat Pengangguran Terbuka, Pengangguran, Upah Minimum, Indeks Pembangunan Manusia*

ABSTRACT

Indonesia possesses a population of roughly 280 million, rendering it one of the most populous nations globally.. A large population, if not managed properly, will cause problems such as unemployment. Based on these conditions, this study investigates the effect of the human development index (HDI) and the district minimum wage on the open unemployment rate (TPT) in Karanganyar District. A quantitative method was used in this study. Secondary data using time series from BPS from 2017 to 2024 was used. The data used in this study were analyzed using IBM SPSS Version 26 statistical software. The results of the analysis show that an increase in the district minimum wage is associated with a significant increase in the TPT, so that every increase in the minimum wage tends to push up the TPT. Conversely, the human development index has been shown to have a significant negative effect on the TPT, indicating that improvements in the HDI can reduce the open unemployment rate. The policy implication of this study is that local governments are expected to determine policies regarding minimum wage increases accompanied by strategies to improve the quality of human resources.

Keywords : *Open Unemployment Rate, Unemployment, Minimum Wage, Human Development Index*

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INTRODUCTION

Indonesia possesses a population of roughly 280 million, rendering it one of the most populous nations globally. A large population, if not adequately controlled and utilized, can lead to future problems, especially in the economic sector. One of the economic problems that will arise is unemployment (Mulyadi et al., 2022). Unemployment denotes an individual who is not engaged in work and is actively pursuing employment, planning to establish a business, or undergoing a hiatus in their job search. It also encompasses those who have secured employment but have not commenced work (BPS, 2021). The mismatch between the number of jobs available, whether provided by the government or the private sector, and the existing labor force is the cause of unemployment (Karlina & Fikir, 2023; Potabuga et al., 2024). The problem of unemployment is a crucial issue and a particular concern to the governments of various countries worldwide, especially developing countries such as Indonesia (Syukriansyah et al., 2024).

The Open Unemployment Rate (OUR) is an important indicator used to evaluate the extent to which the labor force can be absorbed by the labor market effectively and reflects the proportion of individuals of working age who are actively seeking work but have not yet obtained employment opportunities, so this figure is a real picture of the imbalance between the availability of labor and existing employment opportunities (BPS, 2024). OUR is the percentage of the total labor force that has not been able to find a job. Based on data from BPS (2024c), the OUR in Karanganyar Regency has fluctuated in recent years. The following is data on OUR in Karanganyar Regency.

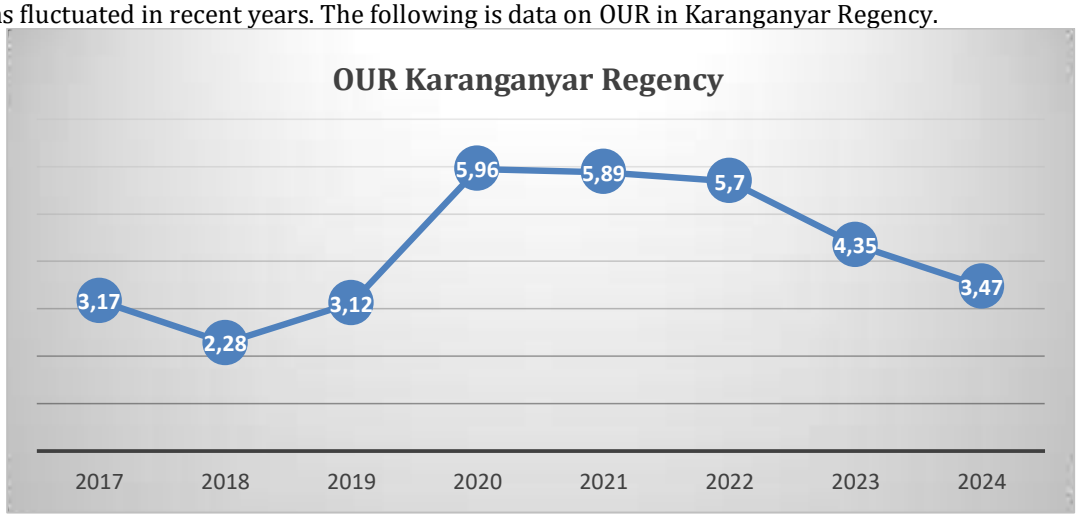

Figure 1. OUR Karanganyar Regency
Source: BPS, 2024

Figure 1 above shows that the OUR of Karanganyar Regency from 2027 to 2024 has fluctuated. In 2017, the OUR of Karanganyar Regency was 3.17%. This figure decreased to 2.28% in 2018, but then increased back to 3.12%. Then, in 2020, there was a significant increase in OUR, reaching 5.96%. Furthermore, in 2021, it became the gateway for the downward trend in OUR, with a yearly decline of 5.89%. Then 5.75 in 2022, 4.35% in 2023, and 3.47% in 2024.

OUR is influenced by several factors, one of which is the regency/city minimum wage (UMK) (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Saputri & Yefriza, 2025). Net wages or salaries are defined as the monthly rewards received by workers, such as laborers, employees, and other personnel, in the form of money or goods provided by employers, companies, or offices after deductions for income tax, mandatory contributions, and other applicable expenses (BPS, 2021). Minimum wage is defined as the minimum monthly salary amount paid by employers to workers who have not worked for one year (Izzati, 2023). Based on Law Number 6 of 2023 concerning the Stipulation of Government Regulation instead of Law Number 2 of 2022 concerning Job Creation into Law article 88c states that there are two types of minimum wages, namely provincial minimum wages (UMP) which must be determined by the Governor every year and UMK wages are also determined by the Governor with certain conditions. Based on data from the Central Statistics Agency (BPS, 2024), regency minimum wages (UMK) from 2017 to 2024 are as follows:

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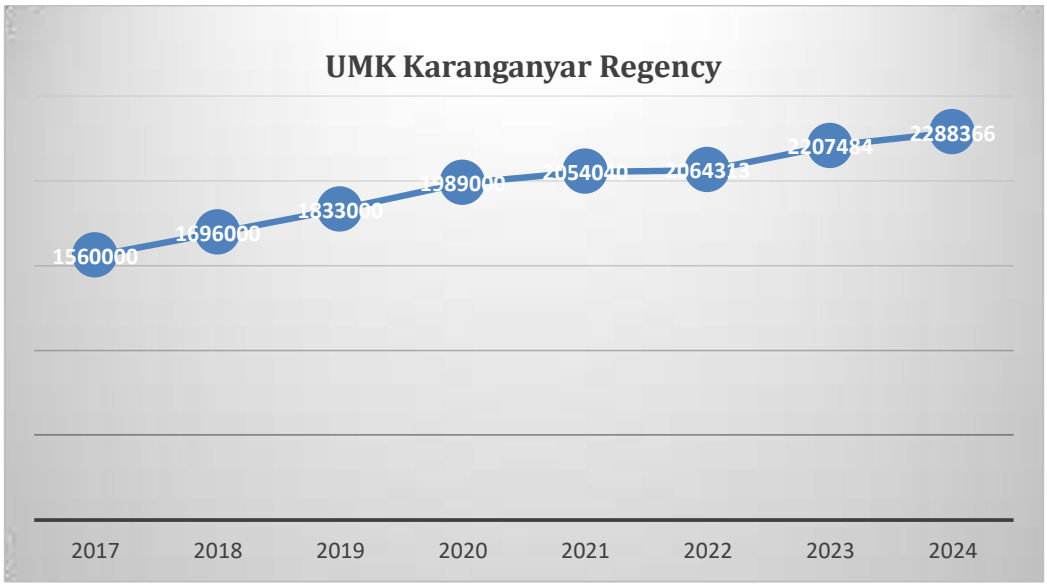

Figure 2. UMK Karanganyar Regency
Source: BPS, 2024

In Figure 2 above, it can be seen that the UMK of Karanganyar Regency has generally increased every year. In 2017, the UMK was Rp 1,560,000.00; in 2018, it was Rp 1,696,000.00. Furthermore, in 2019, the UMK amounted to Rp1,833,000.00. In 2020, the UMK amounted to Rp1,989,000.00. Then in 2021, the UMK will be IDR 2,054,040. Furthermore, in 2022, the UMK experienced a slight increase compared to previous years, namely to Rp2,064,313.00. Then, in 2023, the UMK rose normally again, amounting to Rp2,207,484. In 2024, the UMK again experienced an increase, specifically to Rp 2,288,366.00.

According to Mankiw (2006), the existence of a minimum wage that is set or forced to be above the equilibrium point for any reason, combined with wage rigidity, will cause unemployment to arise. Based on Neoclassical Theory, it is argued an augmentation of the minimum wage above the market equilibrium level—that is, the wage level that would occur without intervention—can cause unemployment. This is because if the minimum wage is set higher than the market wage, workers who are less productive or lack the necessary skills may struggle to meet that standard, leaving them unable to find employment. Conversely, to offset rising labor costs, some businesses may reduce the number of employees or even reduce working hours (Brožová, 2018). Based on previous research, the minimum wage is proven to have a positive influence on OUR (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Pasuria & Triwahyuningtyas, 2022; Saputri & Yefriza, 2025).

The Human Development Index (HDI) is a factor that affects the movement of the OUR, in addition to the minimum wage (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Soeharjoto & Oktavia, 2021). HDI quantifies the advancement of a specific region in terms of human resource development (HRD); it serves as a conceptual basis for regions to evaluate the success of their development (BPS, 2024). The United Nations Development Programme's 2015 Human Development Report explains that human development primarily aims to improve the well-being of people and societies. This is achieved by increasing access to available resources and meeting the basic needs for a good and decent life. There are three indicators to measure HDI: health, measured by Life Expectancy (UHH); education, measured by Expected Years of Schooling (HLS) and Average Years of Schooling (RLS); and a decent standard of living, measured by adjusted per capita expenditure. Based on data from the Central Statistics Agency (BPS, 2024), the human development index (HDI) from 2017-2024 is as follows:

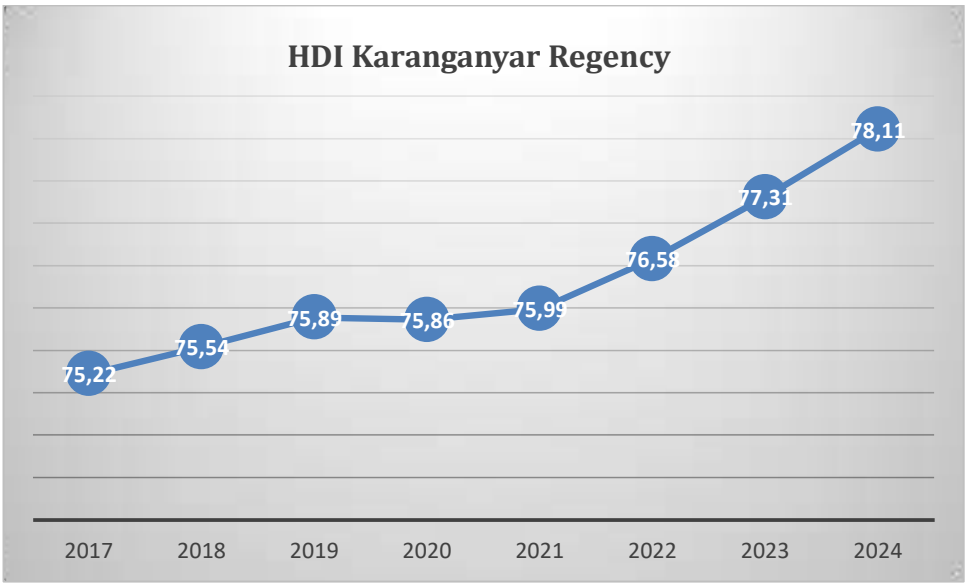

Figure 3. HDI Karanganyar Regency
Source: BPS, 2024

In Figure 3 above, it is evident that the HDI of Karanganyar Regency has generally increased annually. In 2017, the HDI of Karanganyar Regency was 75.22%. Then in 2018, the HDI increased to 75.54%. Furthermore, in 2019, the HDI continued to increase, reaching 75.89%. In 2020, the HDI of Karanganyar Regency experienced a slight decrease, namely to 75.86%. Between 2022 and 2024, the HDI of Karanganyar Regency increased significantly, by 76.58%, 77.31%, and 78.11%, respectively. Based on this data, the HDI of Karanganyar Regency falls within the high HDI category, specifically between 70 and 80.

Human capital theory suggests that the quality of a human resources is the most essential factor (Umamah & Syafitri, 2025). Human capital is not only considered as a resource, but as an asset that can provide benefits in the future. Some elements that determine the amount of human capital include the level of education, health conditions, life expectancy, and population (Samiullah, 2014). According to Becker (1994) and Schultz (1961), when people invest in education, health, and training, productivity increases, enabling the labor market to better absorb the available labor. As a result, the unemployment rate is expected to decrease (Abdi et al., 2024). Based on previous research, HDI has a negative influence on OUR (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Soeharjoto & Oktavia, 2021).

Based on the description and findings presented previously, it can be concluded that minimum wages and HDI are the main determinants of OUR movement. This study was conducted to identify and assess the impact of minimum wage and HDI on OUR in Karanganyar Regency, as there have been fluctuations in OUR in recent years, which may be influenced by changes in minimum wages and the quality of human resources, as reflected in HDI. This study presents two hypotheses: H1: The minimum wage has a significant effect on the Open Unemployment Rate in Karanganyar Regency, and H2: The human development index has a significant effect on the Open Unemployment Rate in Karanganyar Regency. This research is expected to serve as a reference for local governments in developing policies to reduce unemployment and enhance community welfare.

Method Research

The method applied in this research is a quantitative approach. The quantitative approach is a research method that focuses on studying a specific population or sample by utilizing research instruments as a means of data collection. The data obtained are then processed statistically to test the hypothesis formulated from the beginning of the research (Sugiyono, 2019). This study uses three variables: the Minimum Wage and Human Development Index as independent variables, and the Open Unemployment Rate as the dependent variable. This study is situated in Karanganyar

Regency, employing time series data from 2017 to 2024. This study utilizes secondary data from the Central Statistics Agency, encompassing statistics on UMK, HDI, and OUR in Karanganyar Regency. Before to hypothesis testing, the preliminary phase of analysis entails conducting a number of classical assumption tests to verify the validity of the employed regression model. These assessments encompass the Normality Test, which examines how residuals are distributed; the Multicollinearity Test, which identifies potential linear associations among the independent variables; the Heteroscedasticity Test, which evaluates whether residual variances remain consistent; and the Autocorrelation Test, which determines the extent to which residuals are related across successive observations (Ghozali, 2018). Multiple linear regression analysis, a form of regression analysis, is employed for hypothesis testing. Multiple linear regression analysis is employed for hypothesis testing, serving as a statistical approach to ascertain the degree to which two or more independent variables elucidate variations in the dependent variable. Additionally, the t-test is performed to evaluate the relevance of each independent variable on the dependent variable by ascertaining the statistical significance of the variable's regression coefficient. The coefficient of determination is employed to ascertain the extent to which the variation in OUR can be predicted from UMK and HDI, indicating the degree of fit of the regression model to the observed data.

RESULTS AND DISCUSSION

1. Classical Assumption Test

Normality Test

Table 1 displays the outcomes of the normality test conducted by the Kolmogorov-Smirnov method, indicating the Asymp. Sig. (2-tailed) The resultant value is 0.200. This number surpasses the significance criterion of 0.05, suggesting that the data utilized in this investigation are regularly distributed. Ghozali (2018), states that the foundation for decision making in the Kolmogorov-Smirnov normality test involves comparing the significance value; if the Asymp. Sig. exceeds 0.05, the data is deemed to satisfy the normality assumption. The normality of data is a crucial criterion in classical regression analysis, as the normal distribution of residuals guarantees the validity of statistical test outcomes and enhances the dependability of the estimation model.

Table 1. Normality Test

Kolmogorov-smirnov	
Test Statistic	0,149
Asymp. Sig. (2-tailed)	0,200

Source: IBM SPSS Statistics Version 26, Researcher Processed Data

Multicollinearity Test

Table 2 presents the results of the multicollinearity test, indicating that the Tolerance value for the UMK and HDI variables is 0.197, and the Variance Inflation Factor (VIF) for both variables is 5.073. Based on the multicollinearity testing criteria outlined by Ghozali (2018), a regression model is deemed to exhibit multicollinearity if the Tolerance value is ≤ 0.10 and/or the VIF value is ≥ 10. The results derived from this test remain beneath the designated threshold, signifying the absence of multicollinearity symptoms in the employed regression model. This indicates that the independent variables in this study do not have a strong linear correlation with one another, rendering the regression model appropriate for subsequent investigation.

Table 2. Multicolinearity Test

	Collinearity Statistics	
	Tolerance	***VIF***
UMK	0,197	5,073
IPM	0,197	5,073

Source: IBM SPSS Statistics Version 26, Researcher Processed Data

Heteroscedasticity Test

Table 3 presents the results of the heteroscedasticity test, using the significance value (Sig.) of the unstandardized residuals. A value of 0.271 is obtained for the UMK variable and 0.864 for the HDI variable. Both values are above the 0.05 threshold, indicating that there is no evidence of heteroscedasticity problems in the regression model. Based on the guidelines proposed by Ghozali (2018), a regression model is considered free from heteroscedasticity if the significance value of the

residual test is greater than 0.05. Thus, the results of this test strengthen the validity of the model used, as one of the classical assumptions of regression, namely, the equality of residual variances, has been met. Therefore, the model is considered suitable for use in further inferential analysis.

Table 3. Heteroscedasticity Test

Variabel	Unstandardized Residual Sig.
UMK	0,271
IPM	0,864

Source: IBM SPSS Statistics Version 26, Researcher Processed Data

Autocorrelation Test

Table 4 displays the outcomes of the autocorrelation test, employing the Durbin-Watson (DW) statistic, which produced a value of 2.123. The value is situated between the upper limit (DU) of 1.7771 and the 4-DU limit of 2.2229, indicating that the regression model used does not suggest the presence of autocorrelation. As per the decision-making criteria of the Durbin-Watson test, as elucidated by Ghozali (2018), f the DW value is situated between DU and 4-DU (DU < DW < 4-DU), it can be inferred that there is an absence of autocorrelation in the residuals of the regression model. The absence of autocorrelation indicates that the residual value of one observation is not systematically correlated with residuals from other observations, so the assumption of residual independence in linear regression analysis is fulfilled. This improves the model's viability for hypothesis testing and facilitates more precise parameter estimates.

Table 4. Autocorrelation Test

Durbin-Watson
2,123

Source: IBM SPSS Statistics Version 26, Researcher Processed Data

2. Hypothesis Test

The regression equation in Table 5 is as follows:

OURt = 174.179 + 0.000012UMKt + (-2.533HDIt) + εt

Based on this equation, the constant value is 174.179, which means that if UMK and HDI are 0, then OUR is 174.179. Then, the UMK regression coefficient value is 0.00012, which means that if UMK increases by 1, then OUR will increase by 0.00012. Furthermore, the HDI regression coefficient value is -2.533, indicating that for every 1-unit increase in HDI, OUR will decrease by 2.533 units. The decision in the t-test is based on a p-value less than α = 0.01, 0.05, or 0.1; therefore, the alternative hypothesis (H_a) is accepted, and the null hypothesis (H_0) is rejected. Based on Table 5, it can be seen that H1 and H2 are accepted, and H0 is rejected. Furthermore, the Adjusted R-squared value is 0.721, or 72.1%. This means that UMK and HDI influence 72.1% of OUR, then the remaining 27.9% is influenced by other variables or factors.

Table 5. Multiple Linear Regression Test

	Persamaan 1
Konstanta	174,179 **
UMK	0,000012***
IPM	-2,533**
Koefisien Determinasi	0,721

Source: IBM SPSS Statistics Version 26, Researcher Processed Data

(Numbers indicate regression coefficient values and *** indicates significance at the 1% level, ** indicates significance at the 5% level.)

Discussion

The findings of this investigation demonstrate that H1 is accepted while H0 is rejected. The regression coefficient is 0.000012, signifying that the minimum wage exerts a positive and statistically significant influence on the OUR of Karanganyar Regency. If the minimum wage rises by one unit, it is projected that the OUR will increase by 0.000012. The findings of this study align with Neoclassical Theory, which posits that an increase in the minimum wage above the market equilibrium level (i.e., the wage level that would occur without intervention) can lead to unemployment. In other words, if wages rise, unemployment is also likely to increase. In addition, according to Mankiw (2006), the existence of a minimum wage that is set or forced to be above the

equilibrium point for any reason, combined with wage rigidity, can lead to unemployment appearing or increasing.

When the minimum wage is established above the equilibrium level, the firm will diminish its demand for labor as it reduces operational expenses (Jardim et al., 2022; Pasuria & Triwahyuningtyas, 2022). In addition, companies will only hire workers who possess more skills and productivity, thereby enhancing the effectiveness of company operations (Saputri & Yefriza, 2025). This will cause the amount of labor supply to exceed the level of labor demand, or in other words, there will be a labor surplus. This condition forces workers to wait for new job openings, so they must remain unemployed (Mankiw, 2006). The findings of this study align with prior research, demonstrating that the minimum wage exerts a positive and significant effect on unemployment (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Pasuria & Triwahyuningtyas, 2022; Saputri & Yefriza, 2025).

The findings of this study demonstrate that H2 is accepted and H0 is rejected, with a regression coefficient of -2.533. This indicates that HDI exerts a detrimental and considerable impact on OUR in Karanganyar Regency. Specifically, if HDI increases by one unit, it is estimated that OUR will decrease by 2.533 units. This finding aligns with Human Capital Theory, which asserts that investment in human resources can improve worker productivity, allowing the labor market to better absorb available labor. As a result, the unemployment rate is expected to decrease (Abdi et al., 2024).

An increase in HDI indicates that regional autonomy development is progressing well and the quality of the region's human resources is improving (Baihawafi & Sebayang, 2023; Ningrum & Arif, 2024). The HDI of Karanganyar Regency is above the national HDI, signifying a commendable quality of human resources in the region. The HDI of Karanganyar Regency is measured is assessed by three indicators: health, education, and quality of life standards. Measurement using these three combinations will produce better and more comprehensive measurements. When the education aspect is fulfilled, it increases a person's abilities and skills. Then, when the educational aspect is not accompanied by the fulfillment of health aspects and a decent standard of living, it will be challenging to encourage a person's productivity level, even if they possess good abilities and skills (Umamah & Syafitri, 2025). With the fulfillment of these three aspects, labor productivity will increase, enabling it to produce better and more efficiently, which in turn will increase labor demand and decrease the unemployment rate (Potabuga et al., 2024). The findings of this study align with prior research, demonstrating that HDI exerts a negative and significant influence on unemployment (Baihawafi & Sebayang, 2023; Mahroji & Nurkhasanah, 2019; Soeharjoto & Oktavia, 2021).

CONCLUSION AND SUGGESTIONS

This study concludes that the minimum wage exerts a positive and significant impact on the open unemployment rate in Karanganyar Regency, suggesting that an increase in the minimum wage is typically associated with a rise in the open unemployment rate. This finding aligns with the view in Neoclassical Theory, which posits that an increase in wages above the labor market equilibrium level can reduce labor demand, thereby triggering unemployment. Conversely, HDI demonstrates a negative and significant impact on the unemployment rate, indicating that an increase in HDI is anticipated to decrease the open unemployment rate. This finding aligns with Human Capital Theory, which posits that investments in human resources, encompassing education, health, and skill development, are crucial for augmenting individual productivity and improving the probability of successful integration into the labor market. This study's findings are likely to be useful for local governments, particularly the Karanganyar Regency government, when they create or carry out policies related to unemployment.In addition, in determining policies regarding increasing the minimum wage, it is accompanied by a strategy to improve the quality of human resources. Furthermore, the results of this study are expected to serve as a reference or foundation for future researchers in developing further studies relevant to the topic of employment, particularly about the effects of minimum wage and HDI on OUR. This study has limitations, namely, its reliance on cross-sectional data and limited scope to Karangany Regency. Further research is expected to expand the subject by incorporating data from several regency or cities. Furthermore, this research is limited to the Minimum Wage and HDI variables; further research is expected to include other variables relevant to the OUR.

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