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**Analysis of the Effect of Inflation and Investment on
Unemployment in Yogyakarta in 2019-2023**

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ABSTRACT

Unemployment is a term given to people who are not working at all or people who are looking for work. Unemployment occurs in many regions, including the Special Region of Yogyakarta. Unemployment is an economic problem, because unemployment reduces the level of productivity and income of the community, which results in poverty and social problems. Unemployment is caused by the size of the labour force that is not balanced with employment opportunities. This causes intense competition, because there are not many job opportunities available in the region or country. The purpose of this study is to determine the effect of inflation and investment on unemployment in the Special Region of Yogyakarta in 2019-2023. Researchers used secondary data for their research. Multiple regression analysis of this study. The results of the research in D.I Yogyakarta in 2019-2023: 1. Inflation on unemployment has no significant influence on unemployment. 2. Investment has a significant influence on unemployment 3. Simultaneously, inflation and investment have no influence on unemployment. This shows that high unemployment costs lead to reduced productivity, community income and economic growth.

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INTRODUCTION

Inflation, investment, and unemployment are macroeconomic indicators that play an important role in determining the stability and economic growth of a region. In the special region of Yogyakarta, or D.I Yogyakarta, which is famous for its education and tourism, the relationship between inflation, investment, and unemployment is an interesting issue to study. In the context of Indonesia's rapid economic development, understanding this relationship is important to formulate effective policies to address unemployment.

Inflation is a general rise in the prices of goods and services over a period of time, which can affect people's purchasing power and economic welfare (Manuela Langi Theodores ,Masinambow Vecky, 2014). Investment, on the other hand, reflects economic activity that creates jobs and fuels growth. Unemployment, as a socio-economic indicator, shows the number of people without jobs, which can affect social and economic stability (Marihot Nasution, 2016).

This study aims to analyse the effect of inflation and investment on unemployment in D.I Yogyakarta for the period 2019-2023. Through this analysis, we can understand whether high inflation rates lead to increased unemployment or whether strong investment can reduce unemployment in the region. By understanding these correlations and dynamics, appropriate economic policies can be designed to ensure sustainable economic growth and social stability in Yogyakarta.

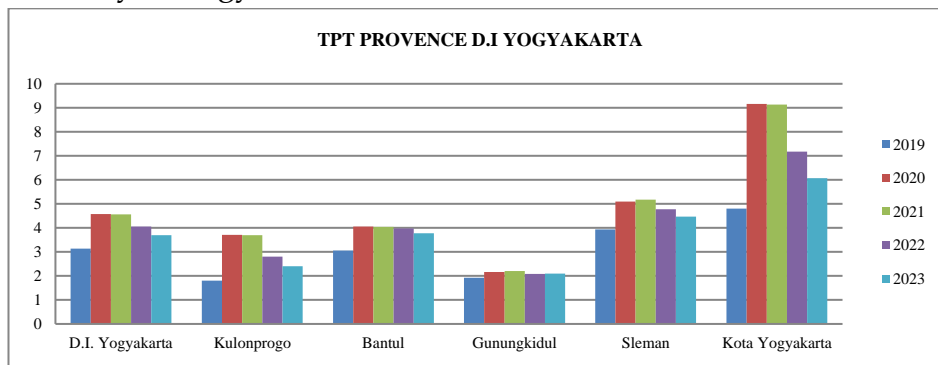


Figure 1.

Above TPT Provence D.I Yogyakarta

Figure 1 above shows the unemployment rate for 2019-2023. The figure shows that the highest unemployment rate in 2020 was around 9.16 per cent. Meanwhile, 2019 showed the lowest unemployment rate at 1.80 per cent. BPS Principal Expert Statistician Heru Margono explained that the high unemployment rate was caused by many influencing factors, including foreign tourist visits which decreased by 63.72 per cent. As a result, many businesses are not operating optimally and eventually there can be layoffs, another factor that also affects the operation of the education sector which is constrained during the pandemic. In fact, many business units depend on their marketing in the education sector. Then, the number of economic support sectors in DIY that were affected made the economic growth rate move negatively. As a result, negative sentiment from all sides makes companies can act to reduce employee working hours and even lay off employees. Meanwhile, he added, the number of workers who experienced a reduction in working hours was also quite high, touching 448,035 people.

This research will use data from official sources such as the Central Bureau of Statistics (BPS) and other relevant government agencies. Statistical and regression analyses will be used to evaluate the relationship between inflation, investment, and unemployment. The results of this study are expected to provide insights for policymakers and other stakeholders in formulating effective economic strategies in D.I Yogyakarta.

RESEARCH METHODE

This study employs a quantitative method with an associative approach to test hypotheses regarding specific events using theory and mathematical models. The associative method is applied to examine the correlation between variables (Yusuf & Heryati, 2023). This research was conducted in Serang Regency, Banten Province, with data collection from the Central Bureau of Statistics in D.I Yogyakarta concerning inflation, investment, and unemployment rates for the period 2019-2023.

The aim of the study is to understand the impact of inflation and investment on unemployment rates in D.I Yogyakarta during the period 2019-2023. The variables in this study consist of independent variables, namely inflation (X_1) and investment (X_2), and the dependent variable, which is the unemployment rate (Y). The operational definitions of the variables are as follows: inflation refers to the general increase in prices in an economy; investment refers to business sector spending on capital goods; and the unemployment rate represents the number of unemployed people as a proportion of the labor force.

The data used in this study is numerical, encompassing inflation, investment, and unemployment rates in D.I Yogyakarta from 2019 to 2023. The Central Bureau of Statistics (BPS) serves as the primary source of data.

The data analysis techniques used in this study include simple regression with an F-test for simultaneous testing, a T-test for partial testing, and classic assumptions for model estimation. The common format for the regression equation used in this study is:

$$Y=a+b_1X_1+b_2X_2$$

Where Y is the unemployment rate in D.I Yogyakarta, X_1 is inflation, and X_2 is investment, all within the period 2019-2023.

RESULT AND DISCUSSION

Table 1.
Hypothesis testing H1 and H2 using t-test

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.652	.428		13.217	.006
	Inflasi	-1.399	1.025	-.303	-1.365	.306
	Investasi	-.071	.017	-.924	-4.166	.053

a. Dependent Variable: Pengangguran

$$t \text{ table} = t (\alpha/2; n-k-1) = t (0,025; 2) = 4,303$$

Testing the First Hypothesis (H1)

It is known that the significance value for variable X1 on Y is $0.306 > 0.05$ and the calculated t value is $1.365 < t \text{ table } 4.303$, so it can be concluded that H1 is rejected, which means that there is no effect of X1 on Y.

Second Hypothesis Testing (H2)

It is known that the significance value for the effect of X2 on Y is $0.053 < 0.05$ and the value of t count is $4.166 > t \text{ table } 9.55$, so it can be concluded that H2 is accepted, which means that there is an effect of X2 on Y.

Table 2.
Hypothesis Testing H3 with the F Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.869	2	.935	9.233	.098 ^b
	Residual	.202	2	.101		
	Total	2.072	4			

a. Dependent Variable: Pengangguran

b. Predictors: (Constant), Investasi, Inflasi

Based on the output above, it is known that the significance value for the simultaneous effect of X1 and X2 on Y is $0.098 > 0.05$ and the calculated F value is $9.233 < 9.55$, so it can be concluded that there is no simultaneous effect of X1 and X2 on Y.

Table 3.
Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.950 ^a	.902	.805	.31815

a. Predictors: (Constant), Investasi, Inflasi

Based on the output above, it is known that the R Square value is 0.902, this indicates the effect of variables X1 and X2 simultaneously on variable Y is 90.2%. Getting optimal results with multiple data analysis is a classic acceptance requirement as shown below:

Table 4.
Classical Assumption Test with Kolmogorov Smirnov Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		5
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.22496728
Most Extreme Differences	Absolute	.404
	Positive	.239
	Negative	-.404
Test Statistic		.404
Asymp. Sig. (2-tailed)		.007 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Based on the results of the normality test, it is known that the significance value is $0.007 < 0.05$. So it can be concluded that the residual value is not normally distributed, so it can be analysed.

Table 5.
Multicollinearity Test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.652	.428		13.217	.006		
	Inflasi	-1.399	1.025	-.303	-1.365	.306	.994	1.006
	Investasi	-.071	.017	-.924	-4.166	.053	.994	1.006

a. Dependent Variable: Pengangguran

Based on the tolerance value of $0.994 > 0.10$, it means that there is no multicollinearity and the VIF statistics value is $1.007 < 0.05$. Based on the VIF statistics value of $1.006 < 10.00$, there is no multicollinearity on unemployment by inflation and investment.

Table 6.
Autocorrelation Test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.950 ^a	.902	.805	.31815	1.228
a. Predictors: (Constant), Investasi, Inflasi					
b. Dependent Variable: Pengangguran					

Autocorrelation aims to test whether there is a correlation between confounding errors in period t with errors in period $t-1$ (previous) using the Durbin Watson test and statistics. It can be seen in the output above the regression is 1.228. At 5% significance, it can be concluded that the effect of unemployment on inflation and investment does not contain autocorrelation.

Table 7.
Heteroscedasticity Test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.182	.262		.694	.559		
	Inflasi	-.040	.628	-.045	-.064	.955	.994	1.006
	Investasi	-.001	.011	-.052	-.073	.948	.994	1.006
a. Dependent Variable: RES2								

Heteroscedasticity test aims to whether there is an inequality of residual variance from one observation to another in the regression model. Based on the output above inflation (X1) significance $0.955 > 0.05$ and investment (X2) significance $0.948 > 0.05$ means that there is no heteroscedasticity and the independent variable has a significant effect on the dependent variable.

Statistical analysis shows that the relationship between inflation (X1) and unemployment (Y) has a significance value of 0.306, which is greater than the standard significance level of 0.05. This indicates that the effect of inflation on unemployment is not significant. In addition, the calculated t value for inflation is 1.365, which is smaller than the table t value of 4.303, reinforcing the conclusion that the hypothesis stating that there is an effect of inflation on unemployment should be rejected. This research is consistent with a previous study (Utomo, 2013) which shows that inflation is not always directly correlated

with the unemployment rate, especially in the short term or in regions with certain economic structures (Nuryani et al., 2018).

In contrast, when we look at the relationship between investment (X2) and unemployment (Y), we find a significance value of 0.053, which is smaller than the significance level of 0.05. In addition, the calculated t value for investment is 4.166, which is greater than the table t value of 9.55. These results show that hypothesis H2, which states that there is a significant effect between investment and unemployment, is accepted. This suggests that investment has a significant impact on reducing the unemployment rate in D.I. Yogyakarta between 2019 and 2023. This finding is in line with previous research (Annazah & Rahmatika, 2019)) which indicates that investment, especially in the form of capital or new projects, tends to increase employment opportunities and boost economic growth, which in turn can reduce unemployment (Nursida et al., 2023).

This analysis has important implications for economic planning and government policy. Since inflation does not have a significant influence on unemployment, policies that focus too much on controlling inflation may not always be effective in reducing unemployment (Simanungkalit, 2020). However, the finding that investment has a significant effect on unemployment suggests that encouraging investment and new economic projects can be an effective strategy to reduce the unemployment rate in the region (Tul Ramadani et al., 2021).

Statistical analysis for the simultaneous effect of inflation (X1) and investment (X2) on unemployment (Y) in D.I Yogyakarta in 2019-2023 shows that the significance value is 0.098, which is greater than the 0.05 significance level. In addition, the calculated F value is 9.233, which is lower than the F table value of 9.55. Thus, the conclusion is that there is no significant simultaneous effect between inflation and investment on unemployment in the region over the period.

Although this result shows no significant effect, additional information can be drawn from the data provided. The simultaneous effect of inflation and investment on unemployment has an R Square of 0.902. This indicates that 90.2% of the variation in unemployment can be explained by the variation in inflation and investment together. However, the significance value that exceeds the 0.05 limit and the calculated F value that is lower than the F table value signify that this result may not be statistically robust, and thus, the hypothesis that inflation and investment simultaneously affect unemployment should be rejected.

The consequence of this result is that a 1 unit increase in unemployment can occur when inflation and investment simultaneously increase by 1 unit.

However, this result also suggests that the unemployment rate may decrease when inflation and investment decrease (Yehosua et al., 2019). In this context, to reduce unemployment, the strategy to consider is not only to suppress inflation or encourage investment, but also to look for other factors that affect the unemployment rate (Suharlina, 2020).

This conclusion needs to be carefully considered in government policy-making and economic planning. Keep in mind that other factors besides inflation and investment can have an important role in influencing the unemployment rate, such as labour policies, growing economic sectors, and technological developments. This result could encourage further research to find factors that significantly contribute to unemployment in D.I Yogyakarta during the same period (Imelia, 2012).

When inflation is high, unemployment tends to be low and vice versa. However, this relationship is not always consistent and can change depending on different economic conditions (Prananika & Satria, 2023). For example, in a situation where there is wage inflation (increase in wages), the demand for labour increases, which can lead to a decrease in the unemployment rate. The more investment, the lower the open unemployment rate. This can be explained by the fact that investment tends to create new jobs and increase the productivity of the economy. However, the impact of investment on unemployment is not always direct (Nursida et al., 2023; Prananika & Satria, 2023).). In some cases, investment is capital-intensive so that increased investment may not be able to absorb more labour from the labour market.

CONCLUSION

An analysis of inflation and investment in D.I Yogyakarta from 2019 to 2023 revealed that, simultaneously, these two variables did not have a significant impact on unemployment rates. However, on a partial basis, the results indicated that inflation did not have an effect, while investment did influence the unemployment rate in D.I Yogyakarta during that period. This finding suggests that the unemployment rate in D.I Yogyakarta from 2019 to 2023 is more dependent on investment than on inflation, indicating that strategies to increase investment could be a key approach to reducing unemployment rates in the region.

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