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The Effects Of Population Size, Inflation, And Regional Gross Domestic Product (RGDP) On Foreign Investment In North Sumatra Province

Pengaruh Ukuran Populasi, Inflasi, Dan Produk Domestik Regional Bruto (Pdrb) Terhadap Investasi Asing Di Provinsi Sumatera Utara

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ABSTRAK
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ABSTRACT
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INTRODUCTION

Regional economic development is a manifestation of integrated efforts to improve public welfare through the optimization of local economic resources. In the framework of development economics, investment is regarded as the main engine of growth that drives capital circulation, technological innovation, and value creation. Investment plays a central role as a driver of regional economic growth, where increased investment is highly necessary to address structural challenges such as high unemployment rates Situmorang. The success of a region in achieving economic development is often measured through Gross Regional Domestic Product (GRDP), which functions as a primary indicator of regional economic progress Addini and Kusrini. In the context of North Sumatra, investment dynamics have become a strategic issue considering its position as an economic gateway in western Indonesia that requires sustainable capital accumulation.

Investment is not merely the addition of physical assets, but also an instrument for transforming a multidimensional economic ecosystem. Capital investment, both in the form of Domestic Investment (PMDN) and Foreign Direct Investment (FDI), plays a role in transforming the economic structure from the primary sector to the secondary sector, which generates higher added value. Foreign investment decisions, for example, are considered a complex strategy that not only transfers capital but also transforms the economic ecosystem through technology transfer mechanisms Sasmito. This process directly encourages increased labor productivity and industrial efficiency at the regional level through more modern production methods Musta'in.

The population variable plays a highly significant dual role in influencing investment flows within a region. On the one hand, a large population represents the potential for a broad domestic market, which can increase demand for goods and services Risyda. Population growth can create greater market opportunities, which in turn stimulate companies to expand capital investment in order to meet market

demand Sihombing. However, an increase in population must also be accompanied by improvements in the quality of human resources so that it does not become a burden on development Dahliah and Nur.

In addition to serving as a market, the population also functions as a provider of labor as a factor of production. An increase in population provides an abundant labor supply that can be utilized by various industrial and service sectors Risyda. Therefore, population dynamics in North Sumatra need to be managed wisely through investments in education and healthcare so that they can contribute positively to sustainable economic growth Kurniawan.

Gross Regional Domestic Product (GRDP) represents the total gross value added generated by economic units within a particular region. From an investor's perspective, GRDP serves as a signal of market size and the purchasing power potential of the population. The larger the GRDP of a region, the more attractive the region becomes to investors due to the assurance of production absorption. Empirical findings confirm that both Domestic Investment (PMDN) and Foreign Direct Investment (FDI) have a positive and significant effect on GRDP growth through increased productivity Sembiring. Economic growth measured through GRDP also contributes significantly to creating a stable business climate for business actors Nasir.

The relationship between GRDP and investment is mutually symbiotic, where an increase in regional output is responded to by producers through the expansion of capital stock in order to maintain market share. GRDP functions as a catalyst for gross fixed capital formation, in which an increase in output triggers the need for new capital in accordance with the acceleration theory Situmorang. However, the quality of economic growth is also influenced by the efficiency of production factor utilization; when GRDP increases, infrastructure generally develops as well, which subsequently reduces logistics costs for companies Sembiring. Therefore, fluctuations in GRDP in North Sumatra become a crucial variable in determining the extent of investor interest in investing capital in the region.

Inflation is a macroeconomic indicator that reflects price stability within an economy. For investors, inflation represents a major risk that can distort business planning and the real value of expected returns. A high inflation rate creates uncertainty that can hinder the inflow of new investment into a region Dewi. Empirically, inflation has been found to have a negative and significant effect on Foreign Direct Investment (FDI), as uncontrolled price increases raise operational risks and exchange rate uncertainty Zaharani and Nasir.

The impact of inflation on investment is also mediated by the monetary policies implemented by the relevant authorities. When inflation increases, banks tend to raise interest rates to maintain economic stability, which subsequently leads to higher borrowing costs for companies (Fisher, 2023). Uncontrolled inflation reduces market efficiency and hampers the accumulation of productive capital (Ismail & Simanjuntak, 2020). This indicates that price stability is a key factor in creating a conducive investment climate in North Sumatra.

LITERATURE REVIEW

Investment Theory

Investment in the modern economic paradigm is viewed as the allocation of capital at the present time with the expectation of obtaining profits or added value in the future (Manullang, 2024). In the context of regional development in Indonesia, investment is divided into two main types, namely Domestic Investment (PMDN), which is carried out by domestic investors, and Foreign Investment (PMA), which involves capital from foreign parties (Irsyad et al., 2025). The presence of foreign investment often brings positive externalities in the form of technology transfer and modern production methods that can enhance the competitiveness of local industries (Musta'in, 2022).

The factors influencing investment decisions are highly diverse, ranging from interest rates and price stability to profit expectations. Keynesian theory emphasizes that investment is strongly influenced by interest rates, where high interest rates increase borrowing costs and tend to reduce investment interest (Irsyad et al., 2025). The relationship between investment and economic growth is mutually reinforcing; investment acts as a driving force of the economy by creating new employment opportunities and increasing public income (Harahap et al., 2025).

Total Population

Population size is a demographic variable that plays a dual role in economic development. According to the Solow-Swan neoclassical growth theory, the population serves as a provider of labor production factors which, when accompanied by improvements in the quality of human resources, will enhance national productivity (Sitorus et al., 2025). In the context of investment, a large population functions both as a source of productive labor and as a broad potential consumer market for industrial products (Risyda et al., 2025). Significant population growth can stimulate an increase in domestic

demand, which subsequently acts as a stimulus for the inflow of new investments to meet market needs (Sihombing, 2020).

However, the influence of population size on investment also largely depends on the quality of the population itself. A large population without corresponding improvements in the Human Development Index (HDI) and employment opportunities can instead become an economic burden and reduce gross regional domestic product (GRDP) per capita (Dahliah & Nur, 2021). Therefore, population dynamics must be managed through policies focused on education and health so that population growth can be transformed into a demographic dividend that attracts investors to productive sectors (Kurniawan, 2021).

Inflation

Inflation is defined as the tendency for the general and continuous increase in the prices of goods and services over a certain period of time (Sitorus et al., 2025). From the perspective of investors, inflation represents a form of macroeconomic risk because it can erode the real value of profits and create uncertainty in long-term business planning (Dewi, 2016).

The impact of inflation on the investment climate can be explained through the Fisher Effect mechanism, which states that changes in inflation expectations will be responded to by monetary authorities through adjustments in nominal interest rates (Fisher, 2023). If inflation rises excessively, central banks usually increase interest rates to reduce money circulation; however, this policy can negatively affect investment due to the higher borrowing costs (cost of capital) faced by companies (Zaharani & Nasir, 2025). Conversely, controlled inflation within the target range reflects economic stability that supports business confidence in expanding their operations (Dewi, 2016).

Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GRDP) is a major macroeconomic indicator that reflects the total gross value added of all goods and services produced by economic units within a particular region over a certain period (BPS, 2023). GRDP functions as a benchmark for the success of regional economic development, where positive GRDP growth indicates an increase in economic activity and public welfare (Nasir et al., 2021). There are two methods of measuring GRDP, namely GRDP at current prices, which reflects value added based on current-year prices, and GRDP at constant prices, which is used to measure real economic growth without the influence of inflation (Sitorus et al., 2025).

The relationship between GRDP and investment can be explained through the acceleration theory, where an increase in regional output or income (GRDP) will encourage the need for new capital (investment) in order to maintain or increase production capacity (Addini & Kusrini, 2021). From the perspective of investors, a high GRDP provides a positive signal regarding large market size and strong public purchasing power potential (Sembiring et al., 2023). Therefore, regions with stable GRDP growth have greater attractiveness for investment compared to regions with stagnant economies.

RESEARCH METHODOLOGY

Research Approach

This study employs a quantitative approach, which is a research method based on the philosophy of positivism to examine a particular population or sample with the aim of testing predetermined hypotheses. The reason for using a quantitative approach is that the analyzed data consist of macroeconomic statistical figures that require mathematical and statistical calculations to examine causal relationships among variables. This approach is considered highly appropriate for the research objective of measuring the partial and simultaneous effects of GRDP, inflation, and population size on investment realization.

Research Location and Period

The location serving as the object of this study is North Sumatra. The selection of this location is based on the significance of North Sumatra Province as one of the economic growth centers on Sumatra Island with relatively high investment dynamics. The study was conducted using secondary data covering the last 16 years, namely the period from 2010 to 2025.

Type and Sources of Data

The type of data used in this study is secondary data, namely data obtained indirectly from original sources through intermediaries or official documents. The data are in the form of annual time series data for the 2010–2025 period. The official data sources used in this study include publications from the Badan Pusat Statistik of North Sumatra Province, monthly reports from Bank Indonesia, and investment realization data from the Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Provinsi Sumatera Utara.

Data Analysis Technique

The data analysis was conducted using the statistical software SPSS (Statistical Product and Service Solutions). The stages of analysis include:

Multiple Linear Regression Analysis

The purpose of this analysis is to measure the strength of the relationship and the direction of influence of the independent variables on the dependent variable. The general form of the multiple linear regression equation used in this study is:

Y=β0+β1X1+β2X2+β3X3+εY=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilonY=β0+β1X1+β2X2+β3X3+ε

Description:

- YYY = Investment realization
- β0\beta_0β0 = Constant
- β1,β2,β3\beta_1, \beta_2, \beta_3β1,β2,β3 = Regression coefficients of each independent variable
- X1X_1X1 = Population Size
- X2X_2X2 = Inflation
- X3X_3X3 = Gross Regional Domestic Product (GRDP)
- ε\varepsilonε = Error term (disturbance variable)

Classical Assumption Tests

The Classical Assumption Tests consist of four stages of analysis, namely the Normality Test, Autocorrelation Test, Heteroscedasticity Test, and Multicollinearity Test. The explanations of these tests are as follows:

Normality Test

This test aims to determine whether the disturbance or residual variables in the regression model are normally distributed. The method used is the non-parametric Kolmogorov–Smirnov test. The model is considered normally distributed if the significance value is greater than 0.05.

Autocorrelation Test

This test aims to determine whether there is a correlation between disturbance errors in one period and those in the previous period. Based on the Santoso Singgih approach cited in Amimah (2022), the autocorrelation test is considered satisfactory if the Durbin–Watson value lies between -2 and 2.

Heteroscedasticity Test

This test aims to determine whether there is inequality in the variance of residuals from one observation to another. This study uses scatterplot graph analysis. According to Ghozali (2005), if there is no clear pattern and the points spread above and below zero on the Y-axis, then heteroscedasticity does not occur.

Multicollinearity Test

This test aims to determine whether there is a correlation among the independent variables in the regression model. The test is conducted by examining the Tolerance and VIF (Variance Inflation Factor) values. If the Tolerance value is greater than 0.10 and the VIF value is less than 10, the model is declared free from multicollinearity.

Hypothesis Testing

In hypothesis testing, several tests are conducted, namely the coefficient of determination test, the t-test (partial test), and the F-test (simultaneous test).

The coefficient of determination test is conducted to measure how far the model is able to explain the variation in the dependent variable (investment). The value ranges between zero and one. The closer the value is to one, the more the independent variables provide almost all the information needed to predict variations in the dependent variable.

The partial t-test is used to examine whether each independent variable (XXX) individually has an effect on the dependent variable (YYY).

Meanwhile, the F-test or simultaneous test aims to determine whether all independent variables collectively have an effect on the dependent variable.

The criteria for these tests are as follows:

- For the t-test, the calculated t-value must be greater than the t-table value with a significance level below 5% or 0.05.

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- Likewise, for the simultaneous F-test, the calculated F-value must be greater than the F-table value with a significance level below 5%.

RESULTS AND DISCUSSION

In this study, the data used were secondary data published by the Badan Pusat Statistik of North Sumatra in the form of time series data covering the period from 2010 to 2025.

Table 1. Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Jl Penduduk	16	13028663,00	15785839,00	14363224,1875	849886,87798
Inflasi	16	1,23	10,18	4,3150	2,68589
PDRB	16	353133,00	661204,00	510958,3125	96205,44358
Investasi Luar Negeri	16	181,10	1848,40	1028,0875	449,05374
Valid N (listwise)	16				

Based on the results obtained from Table 4.1, the following explanations can be provided:

1. The independent variable Population Size has a total sample size of 16, with a minimum value of 13,028,663, a maximum value of 15,785,839, a mean (average value) of 14,363,224, and a standard deviation of 849,886.87.
2. The independent variable Inflation has a total sample size of 16, with a minimum value of 1.23, a maximum value of 10.18, a mean (average value) of 4.315, and a standard deviation of 2.68589.
3. The independent variable Gross Regional Domestic Product (GRDP) has a total sample size of 16, with a minimum value of 353,133, a maximum value of 661,204, a mean (average value) of 510,958.31, and a standard deviation of 96,205.44.
4. The dependent variable Foreign Investment has a total sample size of 16, with a minimum value of 181.10, a maximum value of 1,848.40, a mean (average value) of 1,028.08, and a standard deviation of 449.05374.
5. The total number of samples used in this study was 16 samples.

Classical Assumption Test

The multiple regression analysis method was employed in this study. This analysis aims to examine the influence of the independent variables on the dependent variable. Before conducting the hypothesis testing, the researcher first performed the classical assumption tests. These tests were intended to determine whether the data were normally distributed and to identify whether multicollinearity, heteroscedasticity, and autocorrelation occurred in the study.

Normality Test

One of the tests included in the classical assumption tests is the normality test. The normality test aims to determine whether, in the regression model, the disturbance or residual variables are normally distributed. The method used is the non-parametric Kolmogorov–Smirnov test. The model is considered normal if the significance value is greater than 0.05.

A normal distribution of residuals is an important assumption in the F-test and t-test within multiple linear regression analysis. In addition, the data can also be considered normally distributed if they pass the normality test through the Normal P–P Plot graph. In this graph, the diagonal line serves as the reference for determining whether the data points are distributed around the line area.

The results of the normality test using the Kolmogorov–Smirnov model can be seen in Table 2 below:

Table 2 One-Sample Kolmogorov-Smirnov Test

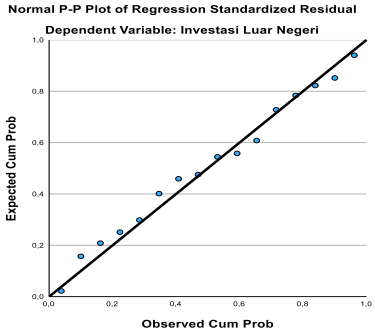
One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		16
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	295,63332445
Most Extreme Differences	Absolute	,079
	Positive	,067

	Negative		-,079
Test Statistic			,079
Asymp. Sig. (2-tailed)[c]			,200[d]
Monte Carlo Sig. (2-tailed)[e]	Sig.		,997
	99% Confidence Interval	Lower Bound	,996
		Upper Bound	,999

One part of the classical assumption test is the normality test. Based on the normality test table above in the One-Sample K-S Test, the Asymp. Sig. (2-tailed) value is shown to be 0.200 > 0.05. This indicates that the normality test demonstrates that the data distribution is normal because the Asymp. Sig. (2-tailed) value of 0.200 is greater than 0.05.

Next, an observation of the Normal P–Plot of Regression was conducted. Based on the figure above, it can be seen that the data points on the graph are distributed around the diagonal line, indicating that the data are normally distributed. The fulfillment of this test indicates that the hypothesis testing can appropriately proceed.

Figure 1. ***Normal P-Plot of Regression***



Multicollinearity Test

The results of the multicollinearity test in this study can be seen in Table 3.

Tabel .3 Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)		
	Jl Penduduk	,393	2,547
	Inflasi	,749	1,335
	PDRB	,481	2,078

In the multicollinearity test above, further observations were conducted using the multicollinearity test. Based on the results obtained, the independent variable Population Size had a tolerance value of 0.393 > 0.10 and a VIF value of 2.547 < 10, indicating that the Population Size variable did not experience multicollinearity.

For the independent variable Inflation, the tolerance value obtained was 0.749 > 0.10 and the VIF value was 1.335 < 10, which means that the Inflation variable also did not experience multicollinearity.

For the independent variable Gross Regional Domestic Product (GRDP), the tolerance value obtained was 0.481 > 0.10 and the VIF value was 2.078 < 10, indicating that this variable also did not experience multicollinearity.

Based on the test results, it can be concluded that the three independent variables did not experience multicollinearity; therefore, the analysis could proceed to the next stage.

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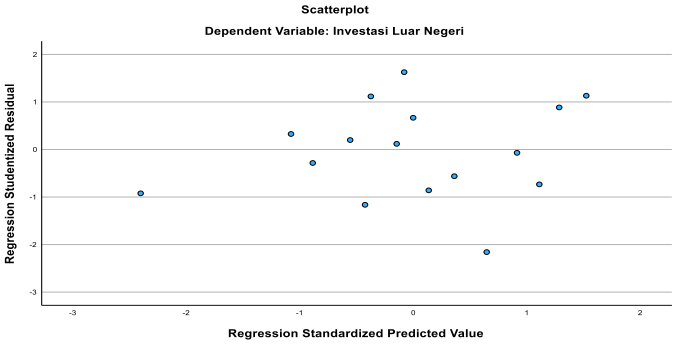
Heteroscedasticity Test

The researcher then presents a scatterplot graph to observe the results of the heteroscedasticity test in this study, as shown in Figure 2.

Figure 2. grafik *scatterplot*



In this test, it can be seen from the scatterplot figure below that the data are evenly distributed both below and above the zero value on the Y-axis. Therefore, it can be concluded that there is no heteroscedasticity problem in this study.

Autocorrelation Test

This test aims to determine whether there is a correlation between the disturbance errors in one period and the errors in the previous period. The test was conducted using the Durbin–Watson (DW-test) method. The model is considered free from autocorrelation if the DW value meets the criterion of −2<DW<2-2 < DW < 2−2<DW<2, in accordance with the guideline proposed by Santoso Singgih.
The researcher presents the results of the Autocorrelation Test in Table 4. below:

Table 4.Autocorrelation Test

Model Summary[b]			
	Change Statistics		Durbin-Watson
Model	df2	Sig. F Change	
1	12	,015	1,716

In the autocorrelation test above, it can be seen that the DW value in this study is 1.716. Therefore, to determine whether autocorrelation occurs, the Santoso Singgih approach can be used, with the criterion that the DW value must lie between -2 and 2. Based on the results of the study, the DW value falls within this range, namely −2<1.716<2, indicating that no autocorrelation occurred in this study. Therefore, the research could proceed to the next stage.

Based on the data processing above, it can be concluded that the data collected by the researcher for both the independent variables (X) and the dependent variable (Y) fulfilled the classical assumption tests and were appropriate for use in the subsequent analyses

Regression Analysis

The multiple linear regression analysis of the influence of Population Size, Inflation, and Gross Regional Domestic Product (GRDP) on Foreign Investment in North Sumatra during the period 2010–2025 produced the following results:

Table 5 Regression Analysis Result

Coefficients[a]							
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
Model		B	Std. Error	Beta			Tolerance
1	(Constant)	-5564,532	1986,306		-2,801	,016	
	Jl Penduduk	,001	,000	,957	3,156	,008	,393
	Inflasi	8,055	36,717	,048	,219	,830	,749
	PDRB	-,001	,001	-,296	-1,079	,302	,481

Based on the data above, the regression equation for Foreign Investment in North Sumatra during the 2010–2025 period can be formulated as follows:

$$Y=-5564.532+0.001X1+8.055X2-0.001X3+\varepsilon$$

Description:

- Y = Foreign Investment
- X1 = Population Size
- X2 = Inflation
- X3 = Gross Regional Domestic Product (GRDP)
- ε = Error coefficient

The coefficients in the multiple linear regression equation indicate that Population Size has a positive coefficient effect on Foreign Investment, Inflation has a positive coefficient effect on Foreign Investment, and GRDP has a negative coefficient effect on Foreign Investment. Further discussion regarding the significant effects of the independent variables (XXX) on the dependent variable (YYY), both simultaneously and partially, will be examined through the F-test and t-test in the following section.

Coefficient of Determination Test

The researcher presents the results of the coefficient of determination test in Table 6. below:

Table 6 Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,753[a]	,567	,458	330,52810

Based on the test results above, it is known that the adjusted R-square value is 0.458 or 46%, indicating that the explanatory power of Population Size, Inflation, and Gross Regional Domestic Product (GRDP) on Foreign Investment is 46%, while the remaining 54% is influenced by other variables not examined in this study.

Simultaneous Significance Test or F-Test

According to Amimah (2022), the Simultaneous Significance Test or F-test aims to determine the effect of the independent variables (XXX) on the dependent variable (YYY) simultaneously or collectively. To test whether the proposed hypothesis is accepted or rejected, the F-statistic (F-test) is used.

Table 7 Simultaneous Significance Test or F-Test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1713753,040	3	571251,013	5,229	,015[b]
	Residual	1310985,938	12	109248,828		
	Total	3024738,978	15			
a. Dependent Variable: Investasi Luar Negeri						
b. Predictors: (Constant), PDRB, Inflasi, Jl Penduduk						

In the F-test above, it can be seen that the calculated F-value is greater than the F-table value, namely 5.229 > 3.490, indicating that the independent variables consisting of Population Size, Inflation, and Gross Regional Domestic Product (GRDP) simultaneously have a significant effect on Foreign Investment. This finding is further supported by the significance value of the F-test result, which is 0.015 < 0.05. The test also shows that the regression model has a good ability to explain the relationship between the independent variables and the dependent variable.

Partial Significance Test (t-Test)

The researcher presents the results of the Partial Significance Test (t-test) in Table 8 below:

Table 8 Partial Significance Test (t-Test)

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5564,532	1986,306		-2,801	,016
	Jl Penduduk	,001	,000	,957	3,156	,008

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	Inflasi	8,055	36,717	,048	,219	,830
	PDRB	-,001	,001	-,296	-1,079	,302

The t-table value in this study is 2.178. From the results of the Partial Significance Test (t-test) above, the influence of each independent variable can be explained individually (partially) as follows:

The Effect of Population Size on Foreign Investment

The t-test analysis for the Population Size variable shows a t-value of 3.156 with a significance value of 0.008. Therefore, the calculated t-value is greater than the t-table value, or 3.156 > 2.178, and the significance value is smaller than 0.05 (0.008 < 0.05). This means that Population Size partially has a significant effect on Foreign Investment in North Sumatra during the 2010–2025 period at a 95% confidence level.

The Effect of Inflation on Foreign Investment

The t-test analysis for the Inflation variable shows a calculated t-value of 0.219 with a significance value of 0.830. Therefore, the calculated t-value is smaller than the t-table value, or 0.219 < 2.178, and the significance value is greater than 0.05 (0.830 > 0.05). This means that Inflation partially does not have a significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.

The Effect of GRDP on Foreign Investment

The t-test analysis for the GRDP variable shows a calculated t-value of 1.079 with a significance value of 0.302. Therefore, the calculated t-value is smaller than the t-table value, or 1.079 < 2.178, and the significance value is greater than 0.05 (0.302 > 0.05). This means that GRDP partially does not have a significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.

Discussion of Research Results

The Effect of Population Size on Foreign Investment

Based on the results of the t-test or partial test, it was found that Population Size has a significant effect on Foreign Investment because the calculated t-value is greater than the t-table value and the significance value is less than 0.05 (3.156 > 2.178 and significance 0.008 < 0.05). The findings also indicate that Population Size has a positive effect on Foreign Investment. In this study, Population Size is the only variable that has a significant and positive effect on the amount of Foreign Investment in North Sumatra throughout the 2010–2025 period.

Population Size has a positive and significant effect on Foreign Investment in North Sumatra Province. This positive and significant effect may be attributed to the fact that the population of North Sumatra Province is among the largest in Indonesia, making it a potentially strong market base for regional economic activities. A large population in a region reflects the high potential demand for goods and services, which can increase profits. Multinational corporations tend to market their products in countries or regions with large populations in order to achieve significant sales.

A high population size in a region also indicates the availability of abundant labor that can be utilized productively. Developing countries generally tend to have lower and more efficient labor costs compared to developed countries, making them attractive destinations for foreign investors to invest their capital. With efficient and affordable labor costs, foreign multinational companies have greater opportunities to produce goods at lower costs, thereby increasing production capacity.

Based on the study by Sari, G.A.A.M.D.D. (2022), the effect of population size on foreign investment showed a positive relationship, which is consistent with the findings of this study. However, in Sari's study the effect was not significant, whereas this study found a significant effect of population size on Foreign Investment in North Sumatra Province during the 2010–2025 period.

The Effect of Inflation on Foreign Investment

The effect of Inflation on Foreign Investment partially shows a positive but insignificant influence. This can be seen from the results of the t-test, where the calculated t-value is smaller than the t-table value with a significance level above α=0.05\alpha = 0.05α=0.05, namely 0.219<2.1780.219 < 2.1780.219<2.178 and a significance value of 0.830>0.050.830 > 0.050.830>0.05. Therefore, it can be concluded that the inflation factor does not have a significant effect on Foreign Investment in North Sumatra during the 2010–2025 period.

The positive influence of Inflation on Foreign Investment may be explained by the tendency of investors to perceive inflation within a country's economy as a form of opportunity. Rising prices of goods may indicate increasing public income and active domestic economic activity within a region, which can provide greater opportunities for investors to obtain higher profits.

Inflation may also indicate that the exchange rate of a country's currency is at a relatively lower value. This condition can provide advantages for investors in terms of production cost efficiency. Nevertheless, inflation within a region must remain under control as a means of maintaining economic stability.

The positive effect of Inflation on Foreign Investment found in this study is consistent with the findings of Dewi et al. (2016), which stated that the inflation variable had a positive but insignificant effect on Foreign Investment. That study, in line with Ratih (2011), explained that foreign investors no longer place excessive consideration on inflation factors when investing their capital because they generally regard inflation within a region as a common phenomenon. Similarly, Alhamsyimi (2010), as cited in Dewi (2016), also stated that inflation is not a variable that can significantly influence Foreign Investment on its own. Other factors, such as human resource capacity, natural resources, and political stability, also play strong roles in convincing foreign investors to invest their capital.

The Effect of GRDP on Foreign Investment

The findings indicate that GRDP partially has a negative but insignificant effect on Foreign Investment. This is because the t-table value is greater than the calculated t-value and the significance level is above 5% (1.079<2.178(1.079 < 2.178(1.079<2.178 and significance 0.302>0.05)0.302 > 0.05)0.302>0.05). Therefore, it can be concluded that every increase in GRDP within a region may influence Foreign Investment in North Sumatra Province during the 2010–2025 period, although not significantly.

The negative relationship between GRDP and Foreign Investment is often associated with the objectives of investors when allocating their capital to a region. Foreign investors are generally not highly interested in the magnitude of GRDP generated by a region. Instead, they focus on seeking the best natural resources and low-cost labor in order to minimize production costs. Investors also tend to reconsider investing in regions with high GRDP because such regions are often associated with high labor costs, high land costs, and high operational expenses. These conditions can increase the production costs borne by investors.

A high GRDP value in a region may also strengthen the local economy, leading to more intense competition within the domestic market and stronger competition with local investors. Based on the study by Manalu (2024), decisions by foreign investors to invest capital are not solely determined by high economic growth within a region, but also by other factors such as policies, infrastructure, and institutional quality.

The findings of this study are consistent with the results of research conducted by Sitorus (2017), which showed that GRDP did not have a significant effect on Foreign Investment. This finding is also in line with the study conducted by Harahap (2022), which similarly concluded that GRDP did not have a significant effect on Foreign Investment.

The Effect of Population Size, Inflation, and GRDP on Foreign Investment in North Sumatra

Based on the results of the F-test, it was found that, simultaneously, the independent variables consisting of Population Size, Inflation, and Gross Regional Domestic Product (GRDP) have a significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period. This can be seen from the comparison between the calculated F-value and the F-table value, where the calculated F-value is greater than the F-table value (5.229>3.490)(5.229 > 3.490)(5.229>3.490) with a significance value below 5%, namely 0.015.

Based on the findings of this study, the adjusted R-square value is 45%, indicating that the combined independent variables are able to explain the phenomenon of Foreign Investment reasonably well. Therefore, this study is sufficiently reliable and appropriate to serve as a reference for future research and practical applications.

The results of this study are consistent with the findings of Ariyadi (2024), which stated that Inflation, Economic Growth, and other combined variables simultaneously have a significant effect on investment. Similarly, the findings of Atmawijaya (2025) revealed that independent variables such as Inflation, together with other variables, simultaneously have a significant effect on Foreign Investment. The study conducted by Dewi (2016) also showed similar results, namely that Inflation, Economic Growth, and other variables simultaneously have a significant effect on Foreign Investment.

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CONCLUSION AND RECOMMENDATIONS

Conclusion

In this study, the researcher examined whether Population Size, Inflation, and GRDP influence Foreign Investment in North Sumatra during the 2010–2025 period. Based on the research conducted in the previous chapters, the following conclusions can be drawn:

1. Population Size partially has a positive and significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.
2. Inflation partially has a positive but insignificant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.
3. GRDP partially has a negative but insignificant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.
4. Population Size, Inflation, and GRDP simultaneously have a significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period at a 95% confidence level.
5. The results of this study indicate that, collectively, the independent variables Population Size, Inflation, and GRDP have a significant effect on Foreign Investment in North Sumatra Province during the 2010–2025 period. Partially, only Population Size has a positive and significant effect on Foreign Investment in North Sumatra Province during the same period. The ability of the three variables to explain Foreign Investment, as reflected by the adjusted R-square value, is 45%, which can be categorized as fairly good. This study concludes that the large population size within a region is one of the main attractions for foreign investors to invest their capital in North Sumatra Province during the 2010–2025 period.

Recommendations

Based on the conclusions and limitations of this study, the researcher proposes several recommendations:

Future researchers are expected to extend the time series or research period in order to produce stronger research findings and may also include additional independent variables to broaden the scope of the study. Expanding the research location or conducting similar studies in different regions is also recommended for future researchers.

The results of this study are expected to serve as a reference for the government in attracting investment, particularly Foreign Investment, by emphasizing that the large population size of North Sumatra Province is one of the indicators of active economic activity and strong market potential, which provides substantial opportunities for investors to gain profits.

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