

Analysis Of The Influence Of Economic Growth, Education, Unemployment Rate And Wages In Reducing The Number Of Poor People In Medan City In 2013 – 2022

Bella Meilya¹, Rahmad Sembiring^{*2}

Departement of Economic Development, Universitas Pembangunan Panca Budi, Indonesia

(email: rahmadsembiring@dosen.pancabudi.ac.id)

Abstract

The city of Medan, as one of the major cities in Indonesia, faces complex challenges related to poverty that have a wide impact on the economy and society of the community. This study aims to analyze economic factors that affect poverty in Medan City, especially the variables of economic growth, education, unemployment rate, and wages during the 2013-2022 period. The method used is multiple linear regression, to measure the simultaneous and partial influence of these variables on poverty levels. The results of the study show that simultaneously, these variables have a significant effect on poverty. However, partially, only wages have a significant influence, while economic growth, unemployment, and education do not directly affect poverty. Increasing wages is a key factor in reducing the poverty rate in Medan City.

Keywords:

Poverty, Economic Growth, Education, Unemployment, and Wages

Introduction

Poverty is a condition of an individual's or society's inability to meet their basic needs, such as food, housing, education, and healthcare. Factors that affect poverty often come from unfavorable socioeconomic environments, such as low education and high unemployment.

Medan City is one of the cities where the percentage of poor and unemployed people is increasing in North Sumatra, which can be seen in the next table. The following is the economic growth data of the city of Medan in 2013-2022:

Table 1 Number of Population

TAHUN	JUMLAH
2013	2135516
2014	2191140
2015	2210624
2016	2229408



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2017	2247425
2018	2264145
2019	2279894
2020	2435252
2021	2460858
2022	2494512

Source: BPS Medan City

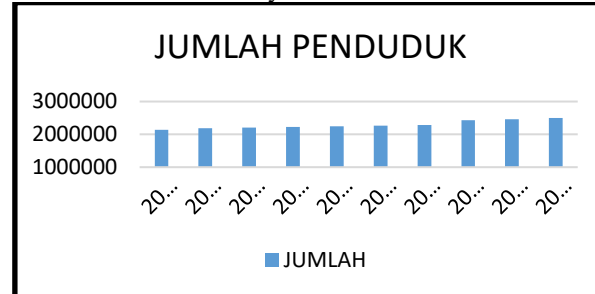


Figure 1 Number of Population of Medan City

Based on the table and graph above, the number of people in the city of Medan has increased every year. In 2013 the number of people sitting in the city of Medan amounted to 2,135,516 residents and increased as time went by from year to year until finally the number of people sitting in the city of Medan amounted to 2,494,512 residents in 2022. The increase in the number of people in the city of Medan is due to the number of births that continue to increase every year compared to the death rate. The birth rate is also triggered by the large number of marriages that are rampant among young people in the city of Medan.

The following is the research data of the city of Medan in 2013-2022:

Table 2 Tabulation of Research Data

TAHUN	UPAH (X1)	PDRB (X2)	PNG (X3)	PND (X4)	KMS (Y)
2013	42.5	4.3	10,01	6.5	24.6
2014	45.2	4.3	9,48	6.1	23.9
2015	46.3	3.8	11	6.2	23.7
2016	46.7	3.6	11,01	5.9	21.2
2017	49	4.1	9,46	6.1	19.1
2018	48.9	4.1	8,25	5.6	20.2
2019	48.8	4.1	8,53	5.5	21
2020	48.1	3.2	10,74	5.2	18.6
2021	48	4.6	10,81	5.1	17.3
2022	47.1	4.4	8,89	7.1	21.4

Source: BPS Medan City

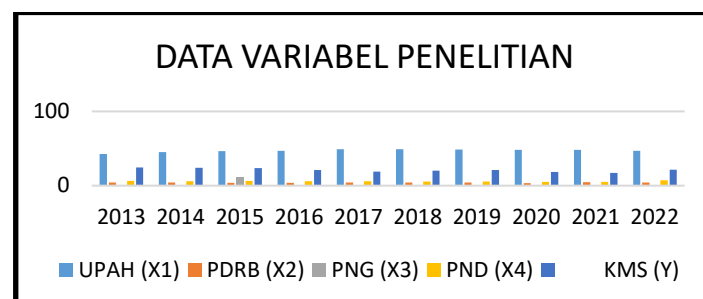


Figure 2 Data Tabulation Image

Source : Table 2

Based on the table and graph above, there is a fluctuation in each variable used. The lowest wage variable was in 2013 at 42.5% and the highest wage variable was in 2018 at 48.9%. For the GDP variable itself, the highest variable is in 2021 and the lowest is in 2020. For the unemployment variable, the lowest unemployment rate was in 2018 and the highest unemployment rate was in 2016. The highest Education rate occurred in 2012 and the lowest Education rate in 2020. The level of poverty that occurred in the city of Medan had a high poverty rate in 2013 and right in 2021 is a low poverty rate.

Literature Review

a. Poverty Theory

The inability to meet one's basic needs such as clothing, food, housing, health care, and education defines poverty. Lack of resources to meet basic needs or barriers to employment and education can lead to poverty. People who have low incomes, have low levels of education, live in places with poor environmental conditions, and suffer from malnutrition and poor health are considered to be in poverty (Fachruurrozi and Hasmarini 2023).

b. Vicious Circle of Poverty Theory

Poverty is a vicious circle caused by a number of interrelated factors that make it difficult for a nation, especially the developing one, to achieve a higher level of development. According to this idea, the poverty of a nation comes from its innate poverty. This theory is based on the idea that resources have a cyclical relationship with each other and tend to influence each other, keeping poor countries constantly poor. In other words, this demonic circle will continue to spin because it resembles an endless circle (Dewi, 2023).

c. Unemployment

Unemployment and poverty have a close relationship in developing countries. If a community that is already working, the community or individual is in a state of prosperity or high welfare, but there are still some who have not worked or are unemployed in the community, then unemployment will automatically occur. Social welfare that automatically affects poverty. High unemployment rates cause low income which will have an impact on poverty levels (Agung Istri, 2015)..

d. Education

Todaro and Smith (2009) argue that poverty eradication can be achieved through the acceleration of educational progress (Tadaro & Smith n.d.). The amount of time spent in school and a person's reading level are two indicators of educational developmental achievement. Improving education in this regard, increasing literacy and extending school days to help fight poverty (Agung Istri, 2015).

e. Minimum wage

The minimum wage affects the poverty rate by raising the average wage, and when workers' wages rise, so does the poverty rate. However, the increase in unemployment caused by the increase in the minimum wage also affects the increase in poverty rates.



f. Economic Growth

There is a negative relationship between economic growth and poverty levels. To reduce poverty, economic growth must be increased, because if economic growth in an area increases, many of the areas also increase, so there are also many people's desire to invest automatically many jobs available, so that the unemployment rate can be suppressed which has an impact on the small poverty rate (Kuncoro n.d.).

Methods

The approach of this research is associative/quantitative research, the research method uses Multiple Linear Regression with SPSS application. The location of the research is Medan City. The data that will be used in this study is secondary data from BPS (Central Statistics Agency). The data collection technique used in this study is by means of documentation studies, namely collecting and processing data from previous information related to the problem being researched. The data used in this study is secondary data taken and processed from the Central Statistics Agency in 2013-2022 (10 years).

Results

Multiple Linear Regression Output Results

Coefficients ^a											
Unstandardized Coefficients			Standardized Coefficients			Correlations			Collinearity Statistics		
Model		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	56.289	16.250		3.464	.018					
	UPAH	-.792	.261	-.666	-3.031	.029	-.794	-.805	-.573	.738	1.354
	PDRB	-.357	1.172	-.061	-.305	.773	.097	-.135	-.058	.882	1.134
	PNG	-.003	.002	-.331	-1.669	.156	-.427	-.598	-.315	.906	1.104
	PND	.967	.934	.244	1.035	.348	.642	.420	.196	.642	1.557

a. Dependent Variable: KMS

$$Y = 56,28 - 0.792X_1 - 0.357X_2 - 0.003X_3 + 0.967X_4 + e$$

Artinya :

- If wages and GDP remain the same, then Poverty is 56.28 units
- If U pah increases by one unit (Appreciation), then Poverty decreases by 0.792 units (Ceteris Paribus).
- If GDP increases by one unit, then Poverty decreases by 0.357 units (Ceteris Paribus)
- If PNG increases by one unit, Poverty decreases by 0.003 units (Ceteris Paribus)
- If PND increases by one unit, Poverty increases by 0.967 units (Ceteris Paribus).

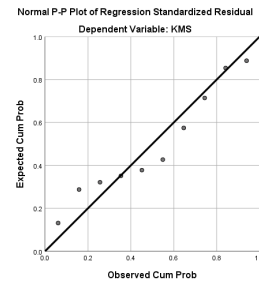
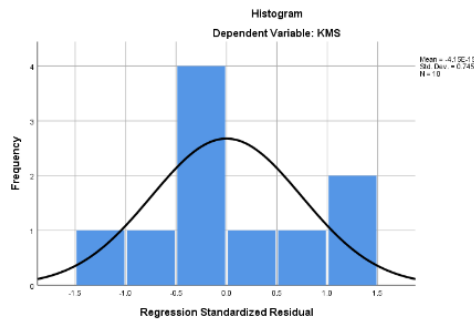
Classical Assumption Test

Data Normality Test



Bella Meilya, Rahmad Sembiring:

*Analisis Pengaruh Pertumbuhan Ekonomi, Pendidikan, Tingkat Pengangguran Dan Upah
Dalam Menurunkan Angka Penduduk Miskin Di Kota Medan Tahun 2013 – 2022*



The histogram graph shows a balanced convex in the middle and the PP-Plot points are between the diagonal lines, then the data is declared to be normally distributed or pass the data normality test.

Multicollinearity Test

Coefficients ^a										
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	56.289	16.250	3.464	.018					
	UPAH	-.792	.261	-.666	.029	-.794	-.805	-.573	.738	1.354
	PDRB	-.357	1.172	-.061	.773	.097	-.135	-.058	.882	1.134
	PNG	-.003	.002	-.331	.156	-.427	-.598	-.315	.906	1.104
	PND	.967	.934	.244	.348	.642	.420	.196	.642	1.557

a. Dependent Variable: KMS

Tolerance value X1 (0.738) > 0.5 and VIF value (1.354) < 5

Tolerance value X2 (0.882) > 0.5 and VIF value (1.134) < 5

Tolerance value X3 (0.906) > 0.5 and VIF value (1.104) < 5

Tolerance value X4 (0.642) > 0.5 and VIF value (1.557) < 5

Then the data is declared free from the problem of Multicollinearity or passes the Multicollinearity test.

Heteroscedasticity Test

Coefficients ^a										
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.071	5.547	.013	.990					
	UPAH	.025	.089	.097	.284	.319	.126	.084	.738	1.354
	PDRB	.754	.400	.590	1.886	.371	.645	.554	.882	1.134
	PNG	.000	.001	-.090	.290	.128	-.129	-.085	.906	1.104
	PND	-.567	.319	-.653	1.779	-.505	-.623	-.523	.642	1.557

a. Dependent Variable: Abs_Res

Visible $0.788 > 0.05$, $0.118 > 0.05$, $0.783 > 0.05$, $0.135 > 0.05$

If the sig is $> \alpha$ then receive H_0 & If the sig $< \alpha$ then receive H_1 . This means that H_0 is acceptable so that it can be concluded that the regression model does not have a heteroscedasticity problem.



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Autocorrelation Test

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.906 ^a	.822	.679	1.36817	.822	5.756	4	5	.041	1.850

a. Predictors: (Constant), PND, PNG, PDRB, UPAH

b. Dependent Variable: KMS

The DW value of 2.460 is already between 1-3, then the data is declared free from autocorrelation problems or pass the autocorrelation test.

Test Goodnes Of Fit

Coefficients ^a											
Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta	Zero-order			Partial	Part	Tolerance	VIF	
1	(Constant)	56.289	16.250		3.464	.018					
	UPAH	-.792	.261	-.666	-3.031	.029	-.794	-.805	-.573	.738	1.354
	PDRB	-.357	1.172	-.061	-.305	.773	.097	-.135	-.058	.882	1.134
	PNG	-.003	.002	-.331	-1.669	.156	-.427	-.598	-.315	.906	1.104
	PND	.967	.934	.244	1.035	.348	.642	.420	.196	.642	1.557

a. Dependent Variable: KMS

T-Test (Partial Hypothesis Test)

1. The significant probability value t for the amount of wages is $0.029 < 0.05$ and the direction of the coefficient is negative, so that H_a is accepted and H_0 is rejected, then the wage has a negative and significant effect on poverty.
2. The significant probability value t for the amount of GDP is $0.773 > 0.05$ and the direction of the coefficient is negative, so that H_0 is accepted and H_a is rejected, then the GDP has a negative and insignificant effect on poverty.
3. The significant probability value t for the number of PNGs is $0.156 > 0.05$ and the direction of the coefficient is negative, so that H_0 is accepted and H_a is rejected, then PNG has a negative and insignificant effect on poverty.
4. The significant probability value t for the number P is $0.348 > 0.05$ and the direction of the coefficient is positive, so that H_0 is accepted and H_a is rejected, then the GDP has a positive and insignificant effect on poverty.

F-Test (Simultaneous Hypothesis Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.101	4	10.775	5.756	.041 ^b
	Residual	9.359	5	1.872		
	Total	52.460	9			

a. Dependent Variable: KMS

b. Predictors: (Constant), PND, PNG, PDRB, UPAH

Based on the results of SPSS data processing, it is known that the probability value of sig is $0.041 < 0.05$, then H_a is accepted and H_0 is rejected. The results of the F test show that PND, PNG, GDP, WAGES have a simultaneous effect on poverty.



Determine Test

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.906 ^a	.822	.679	1.36817	.822	5.756	4	5	.041	1.850

a. Predictors: (Constant), PND, PNG, PDRB, UPAH

b. Dependent Variable: KMS

The Adjusted R Square value of 0.679 or 67.9% means: PND, PNG, GDP, WAGES are able to affect poverty by 67.9%, the remaining 32.1% of poverty is influenced by other variables that are not included in the research model or that are not studied.

Discussion

Analysis of Multiple Linear Regression Results (Economic Growth, Education, Unemployment Rate, and Wages) on Poverty

The results of multiple linear regression analysis show that wages have a negative and significant influence on poverty, with a coefficient of -0.792. This means that any wage increase will significantly lower poverty rates, suggesting that wages are an important factor in reducing poverty. In contrast, economic growth (GDP) showed a negative but insignificant influence on poverty, with a coefficient of -0.357. This shows that partial economic growth does not have a significant impact on reducing poverty. In addition, the unemployment rate also showed a negative influence with a coefficient of -0.003, but this effect was not significant.

This indicates that the change in the unemployment rate is not significant enough to affect poverty directly. On the other hand, education has a positive influence with a coefficient of +0.967, but its effect is also not significant on poverty. This shows that the improvement of education is not yet strong enough in reducing poverty.

The results of this study are in line with the research conducted by (Agung Istri, 2015). In their study, it was found that wages play an important role in lowering poverty, while unemployment and economic growth factors often show insignificant influence due to distribution and employment quality issues.

Hypothesis Test: The Impact of Economic Growth, Education, Unemployment, and Wages on Poverty in Medan City

The results of the F test show that economic growth, education, unemployment, and wages simultaneously have a significant effect on the poverty rate in Medan City, with a significance value of 0.041 (< 0.05). This means that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, indicating that the four variables together affect poverty.

However, the results of the partial test (t-test) show different results for each variable:

Wages: A significance value of 0.029 (< 0.05), indicating a significant influence on poverty. The alternative hypothesis was accepted, and the null hypothesis was rejected.



- Economic Growth (GDP): A significance value of 0.773 (> 0.05), indicating that there is no significant influence on poverty. The null hypothesis was accepted.
 - Unemployment: A significance value of 0.156 (> 0.05), indicating no significant influence on poverty. The null hypothesis was accepted.
 - Education: Significance value of 0.348 (> 0.05), indicating no significant influence on poverty. The null hypothesis was accepted.
- Thus, only wages have a partially significant influence on poverty rates.

Conclusion

In this study entitled "Analysis of the Influence of Economic Growth, Education, Unemployment Rate, and Wages in Reducing the Poverty Rate in Medan City in 2013-2022," it can be concluded that:

- 1) Simultaneous Influence: Overall, economic growth, education, unemployment rate, and wages simultaneously have a significant effect on the poverty rate in Medan City. This shows that policies that include these four variables can have a positive impact on poverty reduction efforts.
- 2) Partial Influence: However, when viewed from the influence of each variable, only wages have a significant influence on the reduction of poverty rates. This means that wage increases are a key factor in reducing poverty rates, while the variables of economic growth, unemployment, and education do not show any significant direct influence.

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