

## **An Analysis of Influencing Factors on Poverty in Sustainability Development Framework: A Case in Deli Serdang Regency, Indonesia**

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**Abstract:** This research aims to analyze some factors influencing poverty in Deli Serdang regency. The method used in this research is the quantitative method with the multiple linear regression analysis. There are five variables; Gross Domestic Product, population, market share of industrial sector, inflation and education are used as independent variables. The number of poverty population is dependent variable with data series taken from the year 1985 up to 2011. The result of this research simultaneously implies that the GDP, population, market share of industrial sector, inflation and education are influencing the number of population in poverty, while the GDP and population influence partially the same population in Deli Serdang regency.

**Keywords:** *Poverty, Population, GDP, Population, Industrial Sector, Inflation and Education*

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### **1. Introduction**

Poverty is one of the issues being debated in the central and local governments in various regions including in Deli Serdang regency. It prevents the growth rate and other development constructions that are caused by cultural, social, political, economic, education factors and others. At the beginning of the new order government, the process of economic development was initially concentrated only in Java, especially Jakarta and in certain sectors. The adopted economic development strategy is more oriented to high economic growth without regards to equitable distribution of the economic development. Despite becoming one of the biggest economy with an average economic growth of 7% - 8% in early 1990s, Indonesia also experienced having high income per capita. However, these positive results do not give any significant impact to poverty alleviation. With the abundant natural wealth, the country's poverty reaches approximately 24% of the total population, or nearly 40 million people at the peak of the economic crisis in 1998-1999. In 2002, the figure had dropped to 18%, and led to 14% in 2004. The situation occurred best between 1987-1996 when the average poverty rate was under 20%, and is the best was in 1996 when the poverty rate only reached 11.3%. The concern of the poverty rate is widespread and soon becomes a global and crucial issue. For example, the United Nations Millennium Summit in September 2000 attended by a total of 189 members had agreed to adopt the Millennium Declaration. The declaration was based on an inclusive approach and grounded in concern for the fulfillment of basic human rights outlined in the Millennium Development Goals (MDGs). Each destination has several targets ranging from reducing poverty, completing the primary level, promoting gender equality, reducing child and maternal mortality, ensuring environmental sustainability and forming partnerships in the implementation of the development.

The economic crisis that occurred years ago i.e. the monetary crisis in 1997, followed by the multi-dimensional crisis negatively impacted the lives of the people in a way that it weakened the purchasing power and income levels, deteriorated the education and health services, increased the number of unemployed as a result of termination (layoffs), weakened the infrastructure development of public interest and reduced the public's confidence in the government bureaucracy. The most prominent is the drastically increasing number of poor people. In order to overcome the economic crisis and the multi-dimensional crisis, the Deli Serdang regency government is trying to find the solutions to reduce poverty, therefore, it is deemed necessary to have accurate data that can describe the characteristics or actual circumstances of the poor people, so that appropriate policies can be taken and stay in accordance with the goals and objectives intended. Therefore, such as an analysis of factors affecting poverty in the regency needs to be done. In addition, every citizen has the right to work and to lead decent living for humanity as well as the fact that every person has the right to attain social security that allows one to develop oneself fully as a dignified human nature. Thus, it is clear that the government including the Deli Serdang regency is obliged to empower the poor in their region to improve the welfare of the society.

In fact, the Deli Serdang regency administration has been implementing various programs among which the provision of rice for the poor, regional health insurance, poverty empowerment program, national program of the rural society, social assistance for the poor and others. It should be realized that those activities are meant to reduce poverty. However, all require a process through a close scrutiny over all the potential stages that include the planning and budgeting. The poverty reduction in Deli Serdang regency is a joint task between the regency government, business and society. With the involvement of all stakeholders in the poverty reduction, this regency is expected to be able to respond to the problems, to the formulation of goals and objectives, as well as its effectiveness and optimal use. Given the magnitude of poverty that still exists in Deli Serdang then this study is given the title "Analysis of Factors Affecting Poverty in Deli Serdang in Sustainable Development Framework". The research question is; "Do the variables of Gross Domestic Product (GDP), population, market share of industrial sector, education level and the inflation affect the number of poor people in Deli Serdang?".

Based on the background and formulation of research problems above, the objectives of this study are as follows; (i) to determine and analyze the effect of the variables of Gross Domestic Product (GDP), population, market share of industrial sector and inflation on the number of poor people in Deli Serdang regency. This study is expected to provide some benefits to:

- The Government of Deli Serdang regency, where it can be used as a material consideration or evaluation of poverty alleviation programs outlined in the development program.
- The communities in Deli Serdang regency, as it can be used to find and add to the success of the program and the dissemination of information that will be achieved by the regency with regards to poverty alleviation.
- The scientists, as it can be used as an input for further research, particularly on poverty alleviation.

## 2. Literature Review

**Poverty and Unemployment Concept:** The poverty reduction requires a paradigm shift from the top down into bottom up construction, by giving a significant role to the public as the lead actor or subject of development while the government functions as a facilitator. The bottom-up process provides a space for people to take part in the planning, determining the needs, making decisions, carrying out and evaluating the development. Moreover, the poverty is characterized by a lack of access to goods, services, assets and opportunities, which is important to signify the rights of every person. Everyone should be free from hunger, shall be able to live in peace, and should have access to basic education and health care services. Poor families need to maintain their survival by means of work and get rewarded fairly and they should receive necessary protection against external shocks. In addition, individuals and societies are also poor and tend to remain as such, if they are not empowered or authorized to participate in decisions that affect their lives.

The definition of poverty can be seen through material dimensions of well-being and social welfare. The poverty is not synonymous with welfare. A study conducted by Ranis (1977) in Tambunan (2009) suggested that in the Republic of China; and Ravallion and Datt (1996) in Tambunan (2008) suggested that in India, the two countries are seen from the level of income per capita and the size of the *Gini* ratio to assess the poverty level. Moreover, the two countries are considerably were in a better position as compared to Latin American countries that have low levels of the *Gini* ratio. There are factors that affected the situation such as the level of ease of getting cheap education, the right to information, that health services are easy and inexpensive, safe feeling both in education and employment, and others. In measuring poverty, many non-financial variables must also be considered.

**The Poverty Criteria:** The criteria of inequality by the World Bank are based on the portion of the national income experienced by the three layers of the population, i.e. 40% of the population had low-income, 40% middle-income, and 20% were of high-income residents. The inequality of the income distribution is expressed when 40% of the low-income residents enjoy less than 12% of the national income. Inequality is moderately considered if 40% of the poor people enjoy between 12-17% of national income. Meanwhile, if 40% of the low-income residents enjoy more than 17% of national income, then the discrepancy or gap is said to be soft, and the distribution of national income is considered evenly fair.

**The Effect of Economic Growth on Poverty:** The economic growth can be interpreted as the increase in the output per capita in the long run. In that sense, there are three aspects that need to be highlighted,

namely the process, output per capita, and the long-term. Growth as a process, means that an economic growth is not serving as an economic picture at a time. Economic growth associated with output per capita, means that it is related to two things, namely the total output (GDP) and population, because the output per capita is the total output divided by the population. Meanwhile, in the long-term, it implies that the increase in the output per capita must be seen in quite a long period of time (10, 20, or 50 years, even longer). The increase in the output per capita in one or two years later following the decline is not economic growth.

Robert Solow developed a model of economic growth known as the Solow model of economic growth. The model departs from the following aggregate production function (Dornbusch et al., 2004):

$$Y = A \cdot F(K, L)$$

The human resources or the number of people (population) is considered to have a passive role in the growth of output. It indicates that the population will adapt to the needs of labor in the society. We have as an example, the labor requirements. At one time labor count had reached 1 million people, but at the moment it is only 900,000 people available, and the population will tend to increase until it reaches 1 million people. However, the labor factor is not confined in the process of national production. Meanwhile, the capital factor is an active influence to economic growth. Therefore, capital accumulation is very instrumental in the process of economic growth.

**Population and Population Growth:** World Bank (2006) classified the characteristics of the poor in the community, region, household and individual. The community factors and infrastructure both serve as major determinants of poverty. The infrastructure is closely associated with the level of welfare of the community and good infrastructure allows people to make economic and social activities, in addition to the fact that it facilitates investors to invest in the region through several means, like providing access to electricity and transportation. Another indicator of the characteristics of the community factor has equal access to employment such as the existence of a business or financial institution and industry. The population increases if the prevailing wage rates are higher than the subsistence wage level, i.e. the level of wages that can be met just to live. If the wage rate is higher than the subsistence wage level, then many marriages carry a relatively young population, so that the number of births increases and finally the number of people also increases. The wage rate is determined by the amount of labor demand. If labor demand is higher than the supply of labor (number of people) then the wage rate will be high. Conversely, if the demand for labor is lower than the labor supply will lower the wage rates.

**Gross Domestic Product (GDP):** GDP is the concept of national income to calculate a country's per capita income derived from the national income in a given year divided by the population of a country. The larger the GDP of a region indicates more affluent areas where the poverty will be reduced.

**The Market Share of Industrial Sector:** BPS (2011) defines an industry or a company's industrial business unit as one (unity) that attempts to engage in economic activities to provide goods or services located on a building / location specific and has its own administrative records regarding production and cost structure, as well as there are one or more persons responsible for the business risk. The industry has two meanings, namely; (i) the industry means as a set of peer companies. In this context, for example, the cosmetics industry means the set of companies producing cosmetics; the textile industry means the set of the factory or textile company; (ii) the industry could lead to an economic sector in which there is a productive activity that processes raw materials into finished or semi-finished goods. Those processes can be electrical, or even manual. Meanwhile, according to law No.5/1984, the industry is an economic activity that processes raw materials, raw materials, semi-finished goods or finished goods into higher value goods for use including industrial engineering. The industries are expected to absorb labors in order to reduce unemployment and the number of poor people.

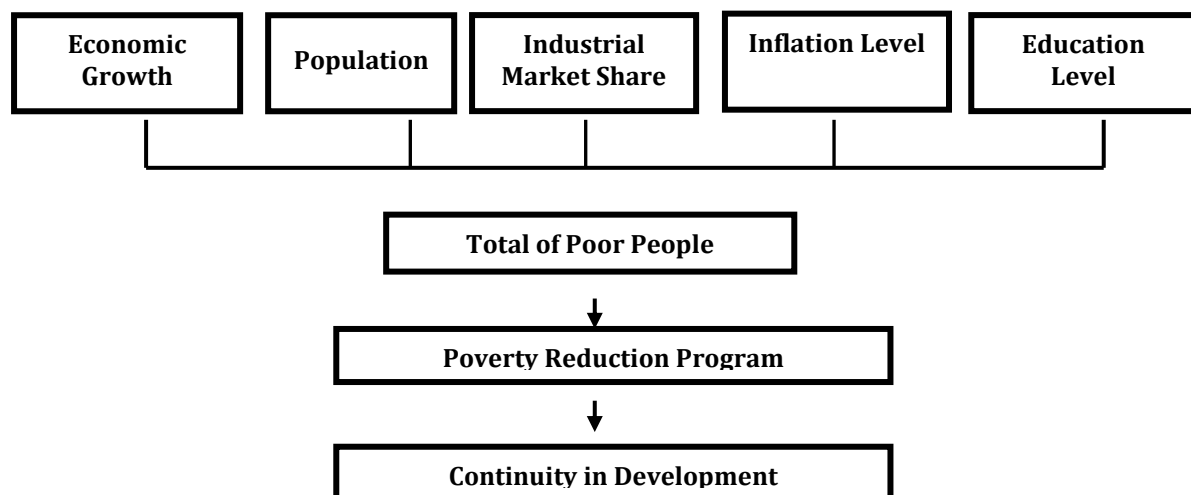
**The Effect of Inflation and Poverty:** An inflation is the tendency of prices to rise in general and continuous (Miraza, 2005) conditions. However, if the price increases for only one or two items, it is not called as an inflation, unless the increase is widespread or the increase is noted in the price of other goods (Sumarsono, 2007). The increase in the prices of goods is not necessarily of the same percentage. The inflation occurs due to excess demand which depends on the elasticity of supply. The greater the elasticity of supply, means that the increase in prices will be offset by the increased production so that the price increase is not significant. In the short term, when there is idle capacity and yet it suffices in the foreign exchange, it will increase the demand and elevate the production as well as encourage the

increase of imported goods. In other words, the effect of the increase in demand has a greater influence on the increase in the production. So "demand pulled inflation" would be more dangerous when there is a "constraint" in terms of foreign exchange and when the economy has been in a position that is almost labeled as "full employment".

**Previous Researches:** Several researches address the effect of economic growth on poverty reduction. A study conducted by Fadli (2011) on factors affecting poverty in Tebing Tinggi City in the context of regional development indicates that regional economic growth and population growth are used as the dominant factor affecting poverty. Meanwhile, Baliscan (2003) who did a study on economic growth and poverty reduction in Indonesia stated that this country has an impressive record on economic growth and poverty. Based on a survey of 285 regencies, it has found a significant difference in the changes of poverty. Moreover, it has also found that there are factors other than economic growth, namely infrastructure, human resources, agricultural price incentives and access to technology. Furthermore, a study by Suharyadi et al. (2007) discussed on economic growth, population and poverty reduction in Indonesia, which emphasized the impact of location and sectoral components of growth. This study shows that the agricultural sector contributes greatly to the reduction of poverty, besides the effect of regional population that has been filled with poor people. In the meantime, Suryadharma and Suharyadi (2007) conducted a study on the effect of the private sectors' growth in decreasing total poverty in Indonesia as well as to see the impact of growth on poverty in public sectors. It stated that the growth of the private capital expenditure is used as a proxy of the private sector and the growth of the government consumption as an indicator of the public sector. The analysis showed that the growth in both sectors significantly reduces the poverty. A research conducted by Wijayanto (2010) on the analysis of the effect of the GDP, education and unemployment on poverty in Central Java. This study examines the influence of the GDP, education (literacy), unemployment on poverty in all regencies in Central Java in 2005-2008. The results of this study indicate that the variable of GDP has negative effect but it is not significant, the variable of education proxied by the literacy rate has negative effect and is significant, and the variable of unemployment has negative effect and is significant, on the level of poverty in Central Java.

**Conceptual Framework:** This study spearheads its aim to analyze the factors causing the occurrence of poverty in Deli Serdang. The poverty leads to the low productivity of the society and results in low income communities, thus, the development sustainability tends to be disrupted. Below is the conceptual framework of the study:

**Figure 1. Conceptual Framework**



**The Research Hypothesis :** Based on a review of the theoretical and conceptual framework described above, the hypothesis in this study is: whether the factors of GDP, population, the market share of the industrial sector, the rate of inflation and the level of education affect the number of poor people in the Deli Serdang regency or otherwise".

### 3. Methodology

This study is based on a causal effect design using the quantitative descriptive method. The population in this study is under the Deli Serdang regency government. Deli Serdang Regency is one of the regencies in the East Coast region of the North Sumatra province. The data are secondary data, containing information on GDP, population, the market share of the industrial sector, the rate of inflation, the level of education and the number of poor people in Deli Serdang regency ranging from 1985-2011 which were collected from the Central Statistics Agency (BPS) of Deli Serdang regency.

To answer the first hypothesis in this study, the study uses the multiple regression analysis with the ordinary least squares method in which the model equations can be formed as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

where:

Y = Number of Poor People

X<sub>1</sub> = GDP

X<sub>2</sub> = Population

X<sub>3</sub> = Market Share of Industrial Sector

X<sub>4</sub> = Inflation

X<sub>5</sub> = Education

a = Constant

b<sub>1</sub> – b<sub>5</sub> = Coeffesien regression

e = *error term*

**Operational Definition of the Variables:** The operational definitions of the variables of the study are provided as follows:

- The number of the poor is the number of people below the poverty line based on the criteria stated by the BPS. The units used are the units in the number of people.
- The GDP is the concept of a region to calculate the revenue per capita income of a region derived from the national income in a given year divided by the population of a country. The units used are the units in Rupiah currency.
- The population is the people who inhabit an area/region. Units used are in units of number of people.
- The market share of the industrial sector is the percentage of the contribution of the industrial sector. The units used are the units in percentage.
- The inflation is the tendency of prices of goods and services to rise, compared to the purchasing power. The units used are the units in percentage.
- The education is the number of communities that have secondary education.

### 4. Findings and Discussion

**Table 1. Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Poverty_Y	27	88,990.00	331,666.00	193,208.9630	76,755.12208
GDP_X1	27	546.35	45,125.83	11,310.0170	13,223.19426
Population_X2	27	1,398,070.00	200,2678.00	1,683,616.9630	167,585.01282
Industrial_X3	27	43.34	49.38	19.235133	21.5525968
Inflation_X4	27	1.48	83.81	9.6037	15.51161
Education_X5	27	16,177.00	77,490.00	26,089.1481	12,667.01073
Valid N (listwise)	27				

**Descriptive Analysis:** Based on Table 1, it can be seen that the number of observations is 27, where the average number of poor people in Deli Serdang regency ranging from 1985 to 2011 was 193.208 people with the lowest number of 88.990 and the highest number of 331.666 people with a standard deviation of 76.755 people. Meanwhile, the number of poor people for a period of four years from 2007-2010 shows fluctuation, where in 2007 the number of poor people was 94.800 or 5.67% and in 2008 the number of poor people decreased by 88.990 or 5.16%, in 2009 it increased to 91,440 or 5, 17% and in 2010 there was an increase of 96,000 people or 5.34%. The average number of GDP based on current prices amounted to 11,310 trillion Rupiah with the lowest number 546,35 billion Rupiah and the highest number 45.125 trillion Rupiah with a standard deviation of 13.223 billion Rupiah. By looking at the figures on the GDP growth rate of a region, it can give an idea of how the development and economic growth have been achieved. Meanwhile, the number of people in Deli Serdang regency from the period of

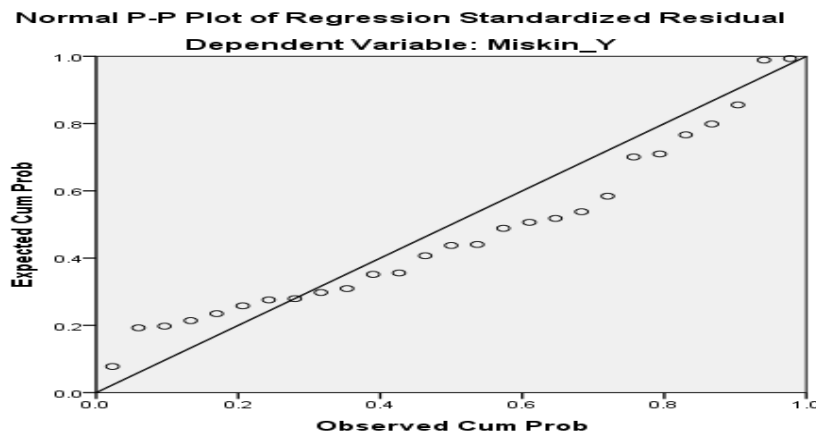
1985-2011 shows the lowest number of 1,398,070 million people and the highest of 2,002,678 people with a standard deviation of 167,585 people. The population tends to increase from year to year.

Moreover, the percentage of the industrial sector in Deli Serdang regency in the time frame of 1985-2011 was contributed by 19.23% in average of the total GDP. The highest contribution reached 49.38% and the lowest reached 43.34%. The greater the growth of the industry in this regency, the more absorbed the labor to work in that sector, thereby reducing the number of unemployed and ultimately reducing the number of poor people. Meanwhile, the inflation figures calculated in the period of 1985-2011 had an average of 9.60%. The highest inflation rate was 83.81% during the monetary crisis in 1998 and the lowest inflation rate 1.48%. The lower the inflation rate, the higher the purchasing power of people and it provides opportunities for savings so as to increase welfare. Finally, the educational level was measured from junior high school graduates in the period of 1985-2011 with an average of 26,089 people. The highest number was 77,490, the lowest was 16,777 people and the standard deviation was 12,667 people.

## Data Analysis

**Normality Test:** The normality test aims to see whether the dependent and independent variables in the regression model are both distributed normally or otherwise. Ghozali (2005) states that the normality can be seen on the data distribution when the curve does not pass through either the left or the right. As depicted in Figure 4.1, it shows that the data output is normally distributed.

**Figure 2. Normality Data**



**Multicollinearity Test:** The test for multicollinearity is to see whether the regression model has a correlation between the independent variables. Menard (1995) points out that the VIF value greater than 10 indicates a collinearity problem. For this model, as depicted in Table 3, the VIF values are all well below 10. Therefore it is safe to conclude that there is no collinearity within the data in the study.

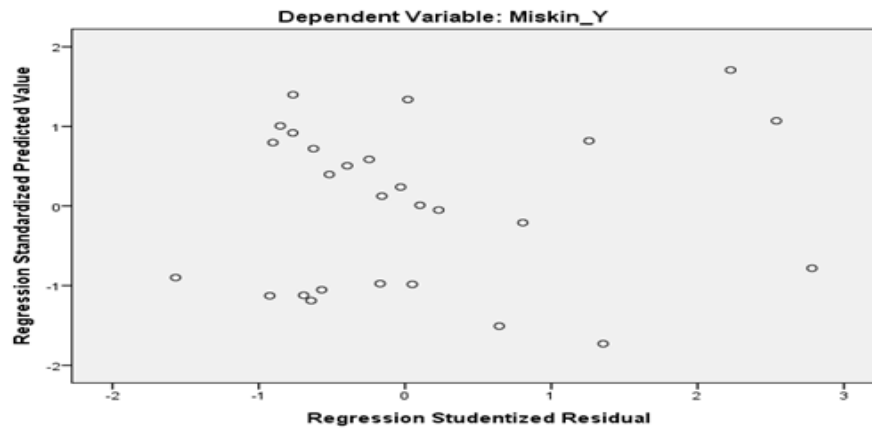
**Table 3: Multicollinearity Test**

Coefficients <sup>a</sup>		Collinearity Statistics	
Model		Tolerance	VIF
1	GDP_X1	.397	2.520
	Population_X2	.615	1.627
	Industrial Share_X3	.344	2.911
	Inflation_X4	.907	1.102
	Education_X5	.552	1.811

a. Dependent Variable: Poverty\_Y

**Heteroscedasticity Test:** According to Ghozali (2005), a good model in a regression model can be observed with the absence of heteroscedasticity presented in the scatterplot diagram as illustrated in Figure 3 below:

**Figure 3: Scatterplot Graphic**



The diagram shows that the points are spread randomly, that they do not form a specific and clear pattern which also spreads both above and below the number 0 on the y-axis, thus it is concluded that there is no heteroscedasticity in the model.

**Autocorrelation Test:** The autocorrelation could be detected by running the Durbin-Watson (DW) test which has been stated by Ghozali (2005). According to Ghozali, the d values are then compared with the value of  $d_{table}$  of the 5% significance level with  $df = nk-1$ . From the test results depicted in Table 4, it shows that the DW value is 1.260, meaning that the data are not affected by autocorrelation.

**Table 4. Autocorrelation Test**

Model	R	R Square	Durbin-Watson
1	.957a	.917	1.260

**Goodfit of the Model:** The hypothesis in this study that revolves around the GDP, population, the market share of industrial sector, inflation and the level of education affecting some poor people in Deli Serdang regency is thus, acceptable. Goodness of fit testing is done to determine the feasibility of a regression model, because the study variables over the feasibility of the two variables can be seen from the value of the Adjusted R Square. The adjusted R Square value obtained from the data processing can be seen in Table 5 below:

**Table 5: Goodfit of the Model**

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
1	.957a	.917	.897	24638.30599	1.260

a. Predictors: (Constant), Education\_X5, Inflation\_X4, GDP\_X1, Population\_X2, Industrial\_X3

b. Dependent Variable: Poverty\_Y

Adjusted R Square values as illustrated in Table 5 above are 0,897. This indicates that 89.7% variables namely GDP, population, the market share of industrial sector, inflation and the level of education do affect the number of poor people in Deli Serdang. A percentage of 10.3% is influenced by other variables that are not explained by the model of this study. To see the level of confidence in the results of hypothesis testing, the next significant test was then conducted. The significant test distinguished a simultaneous significance test (F test) and partial significant test (t test) with the significance level  $\alpha = 5\%$ .

## Hypothesis Model Test

**F Test:** To examine whether the value of Adjusted  $R^2$  coefficient has a significant relationship or otherwise, it is then suggested that the Fisher's statistical test (F Test) is run, with a level of confidence by 95%. This method dictates that, when the  $F > F_{table}$ , then  $H_0$  is rejected, and if  $F \leq F_{table}$  then  $H_0$  is acceptable. Table 6. presents the summary of the test, whereby it shows that the value of F is 46.266 at a significance level of 0.000. Meanwhile,  $F_{table}$  with 95% confidence level ( $\alpha = 0.05$ ) reads 2.54. Therefore, in both the calculations  $F > F$  ( $46.266 > 2.54$ ). This suggests that the variables X1, X2, X3, X4 and X5, partially and simultaneously have no effect on Y, thus  $H_0$  is rejected while  $H_1$  is accepted.

**Table 6: F Test**

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	140427099351.821	5	28085419870.364	46.266	.000 <sup>b</sup>
	Residual	12747968561.142	21	607046121.959		
	Total	153175067912.963	26			
a. Dependent Variable: Y						
b. Predictors: (Constant), X5, X4, X1, X2 X3						

**T Test:** Partially, only the variable for total population (X2) having an effect on the number of the poor in Deli Serdang is acceptable as depicted in Table 7 below:

**Table 7: T Test**

Coefficients <sup>a</sup>						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-146714.081	55468.504		-2.645	.015
	GDP_X1	-4.205	.580	-.724	-7.249	.000
	Population_X2	.226	.037	.493	6.139	.000
	Industrial_X3	-6.810	3.825	-.191	-1.780	.089
	Inflation_X4	608.921	327.023	.123	1.862	.077
	Education_X5	.562	.513	.093	1.095	.286

a. Dependent Variable: Poverty\_Y

As depicted in Table 7., the multiple regression equation is arranged as follows:

$$Y = -146714.081 - 4.205X_1 + 0.226X_2 - 6.810X_3 + 0.562X_4 + 608.921X_5 + e$$

The multiple regression model means:

- The constant value of -146714.081 means if the value of the variables X1, X2, X3, X4, X5 is zero, then the dependent variable of the number of poor people would fall by 14.67 units.
- The X1 variable negatively affects the number of poor people with an influence coefficient of -4.205, meaning that each decrease of 1 unit of X1 will raise the number of the poor people by 0.205 units.
- The X2 variable has a positive effect on the number of poor people with the influence coefficient of 6.139, meaning that each additional 1 unit of X2 will increase the number of the poor people by 6.139 units.
- The X3 variable negatively affects the number of poor people with an influence coefficient of -6.810, meaning that every 1 unit increase in X3 will raise the rate of poverty by 6.81 units.
- The X4 variable has a positive effect on the number of poor people with influence coefficient of 608.921, meaning that every 1 unit increase in X4 will raise the number of the poor by 608.921 units.
- The X5 variable has a positive effect on the number of poor people with influence coefficient of 0.562, meaning that for every 1 unit increase in X5, there will be an increase in the number of poor people by 0.562 units.



As illustrated in Table 7 above, it shows that the independent variable of X1 ( $-7.249 > t_{table}$  of 1.684) has a significant effect on the number of poor people where the value of  $t > t_{table}$ . Thus,  $H_0$  is rejected and  $H_1$  accepted. Moreover, the X2 variable with the positive direction ( $6.139 > 2.074$ ) significantly affects the number of poor people where the value of  $t > t_{table}$ . Thus, we reject  $H_0$  and accept  $H_1$ . Meanwhile, the industry variable (X3) with the positive direction ( $-1.780 < 2.074$ ), the rate of inflation (X4) with the positive direction ( $0.110 < 2.074$ ) and education level (X5) with the positive direction ( $1.095 < 2.074$ ) have had no effect on the number of the poor in Deli Serdang regency with the value of  $t < t_{table}$ .

**Discussion:** The hypothesis leaning on the GDP, population, the market share of industrial sector, inflation and the level of education affects the number of poor people in Deli Serdang regency is acceptable. According to Suharyadi et al. (2007), the poverty rate has become a national concern. They state that the national poverty reduction efforts will not be effective if the social, political, and economic areas are not conducive to poverty reduction. Thus, an effective poverty reduction requires proper design and implementation of efficient programs at national and regional levels. In other words, increasing the capacity of local governments in designing and implementing poverty reduction programs is a must. The role of the local government especially in the Deli Serdang regency in the effort to accelerate poverty reduction becomes very important. The existence of the local government is meant to protect and prosper the public, to encourage the process of democratization and political education locally, ensure the effectiveness and efficiency of the civil and public service, promote and increase community participation, as well as empower the potential and diversity of the region.

According to Dornbusch et al. (2004), the government has three main functions in the economy, namely (i) improve the efficiency; (ii) create equity or justice; and (3) spur the economic growth and maintain macroeconomic stability. In the early stages of economic development, the percentage of government investment towards the total investment is very large due to the need for the provision of infrastructure. Moreover, the role of the government remains bigger at intermediate stages because it has a greater role in supporting the private sector which generates a lot of market failure. The poverty is an issue that concerns many aspects relating to low income, illiteracy, poor health status and inequality between the sexes and poor environment (World Bank, 2009), all of which influenced by a variety of interrelated factors, such as the level of income, economic growth, unemployment, health, education, access to goods and services, location, geography, gender, and the location of the environment. Moreover, the poverty is no longer understood merely on economic incompetence, but also a failure to fulfill the basic rights and discrimination against a person or group of people to live a life with dignity. Therefore, the government is determined to overcome the problems of poverty so that development could be conducted continuously including determining the limit of the measures to identify who the poor are. According to the BPS (2011), the GDP is the sum of the value of net output generated by all economic activities in a certain area, and within a certain period of time (one calendar year). It should be stated that the economic activities meant consist of agricultural, mining, industrial processing, and service-related activities.

According to Kuznets in Tambunan (2001), growth and poverty have a very strong correlation, because in the early stages of the poverty development process they tend to increase, while when approaching the final stage of development the number of poor people is gradually reduced. The economic growth has both a positive and negative effects. Economic growth can lead to prosperity in a certain areas but the number of poor remains and this is because economic growth is uneven due to the domination by certain groups or classes. Furthermore, Herman and Dwi (2006) revealed the importance of accelerating economic growth to reduce poverty. With the rapid economic growth in a region, the poverty rate can be reduced. Poverty is one of the indicators for the success of regional development. The results of this study are aligned with the research conducted by Suharyadi et al. (2007) on economic growth, population and poverty reduction in Indonesia. The study shows that the agricultural sector contributes greatly to the reduction of poverty. Besides, the larger population in a region comprise of potentially poor people. In the case in Deli Serdang regency, various programs/activities have been implemented to reduce the poverty rate. These are included in the process that should be integrated with the planning and budgeting of the regency's administration.

## 5. Conclusion

This study concludes that the variables of GDP, population, the share of industrial sector market and inflation rates do affect simultaneously the number of poor people in Deli Serdang; whereas the variables of (GDP) and population partially affect the number of poor people in Deli Serdang. Meanwhile, there are

limitations of the study such as (i) the data are from 1985-2011 time series which are considered too small to describe the influence of poverty factors in Deli Serdang regency; (ii) the use of market share in the industrial sector is one of the components that contribute to GDP, instead of other components such as trade, hotel and restaurant whereby it could contribute to the decrease of the total number of the poor people. However, this study has put forth several suggestions for further researches namely (i) to include the variable-level education with graduate-level university; (ii) the research data may be longer and have a wider sample; and (iii) to include the elements of the allocations of government spending, especially the capital expenditure allocation that may contribute to the reduction of the poverty rate.

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