

The Convergence of Percapita Income in Central Sulawesi Province

Konvergensi Pendapatan Perkapita di Provinsi Sulawesi Tengah

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Abstract

This research aims at analyzing the influence of economic growth and human development index on the poverty rate of 13 regencies/cities in Central Sulawesi Province. The data were analyzed using panel data which employed Eviews version 11 software. The result of fixed effect model regression shows that economic growth and mean years of schooling negatively and significantly affect poverty rate, life expectancy and per capita expenditure positively and significantly affect poverty rate, and expected years of schooling does not affect poverty rate in regencies/cities of Central Sulawesi Province. To mitigate the poverty rate constant reference to pro-poor, pro-job, and pro-growth policies should be maintained and job vacancy need to be expanded and regency/city government could increase the realization of school and teacher facility spending budget allocation, administer nonformal education which can increase workers' productivity, provide hospital, public health center, secondary public health center and health personnel facilities, public infrastructure and education assistance such as providing training on creativity in cooperatives and micro-, small-, and medium-enterprises (MSMEs).

Keywords: poverty, economic growth, human development index.

Abstrak

Penelitian ini bertujuan menganalisis pengaruh pertumbuhan ekonomi dan indeks pembangunan manusia terhadap angka kemiskinan di 13 kabupaten/kota di Provinsi Sulawesi Tengah. Data dianalisis menggunakan data panel yang menggunakan perangkat lunak Eviews versi 11. Hasil regresi model fixed effect menunjukkan bahwa pertumbuhan ekonomi dan rata-rata lama sekolah berpengaruh negatif dan signifikan terhadap angka kemiskinan, angka harapan hidup dan pengeluaran per kapita berpengaruh positif dan signifikan terhadap angka kemiskinan, dan harapan lama sekolah tidak berpengaruh terhadap angka kemiskinan di kabupaten/kota. Provinsi Sulawesi Tengah. Untuk memitigasi angka kemiskinan tetap mengacu pada kebijakan pro-poor, pro-job, dan pro-growth harus dipertahankan dan lowongan pekerjaan perlu diperluas dan pemerintah kabupaten/kota dapat meningkatkan realisasi alokasi anggaran belanja fasilitas sekolah dan guru, mengelola pendidikan nonformal yang dapat meningkatkan produktivitas tenaga kerja, penyediaan fasilitas rumah sakit, puskesmas, puskesmas dan tenaga kesehatan, bantuan prasarana dan pendidikan seperti pemberian pelatihan kreativitas koperasi dan usaha mikro, kecil, dan menengah (UMKM).

Kata kunci: kemiskinan, pertumbuhan ekonomi, indeks pembangunan manusia.

INTRODUCTION

Poverty has been a central issue in every country, including Indonesia. The poverty phenomenon serves as a real portrait between regions which can be depicted in terms of geographical location, income level, low human resources quality, poorly managed natural resources, rapidly increasing number of population, limited knowledge on developing

economic sectors such as agriculture, processing industries, and mining and energy, annually increasing unemployment trend, and decreasing economic growth from one year to another. The poverty portrait can also be found in regencies/cities in Central Sulawesi Province. From 2018 to 2020, its poverty rate percentage mean ranges from 6% to 7%. In 2020, the highest poverty rate was found in

Parigi Moutong Regency at 78.78% which was actually a regency with abundant natural resources and located close to the capital of Central Sulawesi Province. Meanwhile, the lowest poverty rate was found in Banggai Laut Regency at 11.09%. Based on the obtained

data, the poverty rate in rural (regency) areas is higher than in urban areas from 2018 to 2020 with the number of population being higher in regency areas than in urban areas. This implies that many people in Central Sulawesi Province live under the poverty line.

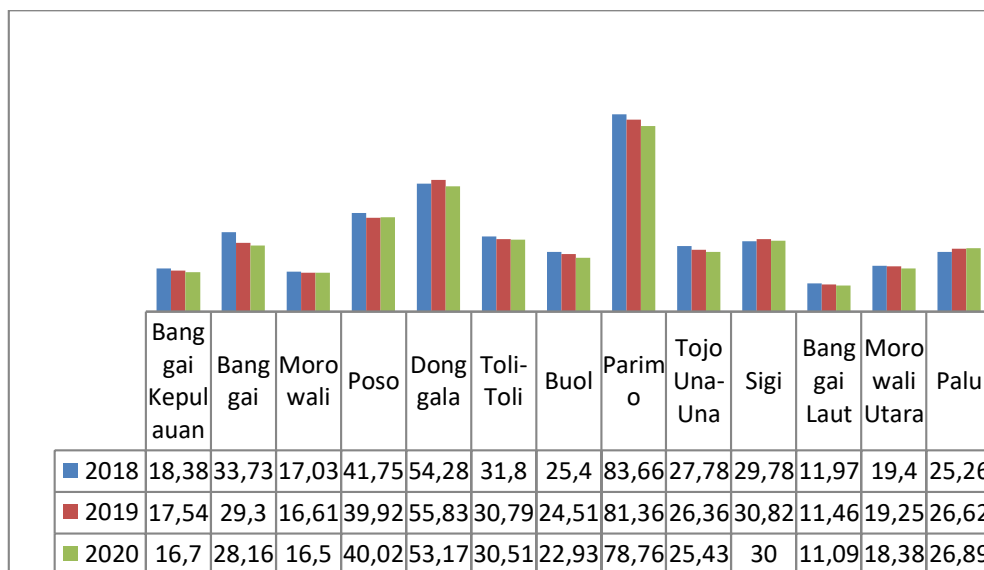


Figure 1. Poverty Rate Of Regency/Cities In Central Sulawesi Province
Sources: BPS Sulteng, 2021

One of the indicators used to see whether or not a development and poverty rate alleviation are successful is economic growth level. This economic growth level is measured from the magnitude of regencies/cities' gross regional domestic product (GRDP).

The data (BPS Kabupaten Banggai, 2021) shows that the economic growth value in Central Sulawesi Province can be said as constantly decreasing as can be seen from the data in Morowali Utara Regency (-0.22%), followed by Banggai Laut Regency (-1.97%), and Morowali Regency (28.93%). Tambunan (2011) suggests that economic growth and poverty has a tight correlation, which at the start of a development the poverty rate tends to be high and at the end of the development the poverty rate will gradually decrease. In addition, Kuznets argues that the development process will be accompanied by substantial increase of inequality so that the poor will receive a portion of economic growth. The research conducted by Knowles indicates the negative and significant correlation between economic growth and poverty.

Just as the case with GRDP, human development index (HDI) can also influence

every increase or decrease of poverty rate. Some components of human development index according to UNDP (2007) include life expectancy, expected years of schooling, mean years of schooling, and per capita expenditure. HDI level will affect population productivity. The lower the HDI the lower the population productivity level would be. In turn, this will result in low income. On the contrary, the higher the HDI the higher the population productivity would be, resulting in higher income. The problem is that the HDI in each region is varied. This makes HDI one of the factors which affects poverty (Maulana & Alamsyah, 2021). High-quality human resources is an important requisite for a development to run sustainably. Also, Sharp suggests that economically speaking the cause of poverty is the low quality of human resources. Jhingan (2012) mentions that shaping human capital is an attempt to obtain and increase the number of people with skill, education and experience which determine the economic development in a country. The average human development index of regencies/cities in Central Sulawesi Province from 2018 to 2020 increases, where in 2018 the

human development index of City of Palu is the highest at 80.91% increases to 81.5% and this is relatively high since it is within the 70-80 percent range. The different human development index percentages in regencies/cities in Central Sulawesi Province indicates a gap as phenomena of high or low education level, income and life expectancy at birth of the community, thus human development still need improvement.

Based on the aforementioned background, this research aims at analyzing the influence of economic growth and human development index (HDI) on poverty rate in regencies/cities in Central Sulawesi Province.

LITERATURE REVIEW

Poverty is the inability of a person economically based on food and non-food which is calculated based on expenditure. To measure the level, the Poverty Line is used which consists of two categories, namely the Food Poverty Line (GKM) and the Non-Food Poverty Line (GKNM).

The Human Development Index (HDI) is a comparative measure of life expectancy, education, and living standards for all countries. HDI is used as an indicator to assess the quality aspects of development and to classify whether a country is a developed country, a developing country, or an underdeveloped country and also to measure the effect of economic policies on the quality of life. (Directorate of Statistical Analysis and Development of BPS, 2015).

Economic growth is development economic activity that causes the production of goods and services to increase and the prosperity of society increases. (Sukirno, 2011)

RESEARCH METHODOLOGY

This research is a quantitative one of descriptive analysis nature, using a combination of time series and cross section secondary data or panel data. The research was conducted in 13 regencies/cities in Central Sulawesi Province for 2016-2020 period. The data in this research were collected by combining the secondary data which had been officially documented and published by BPS of Central Sulawesi Province and other relevant institutions. The variables used in this research are poverty rate (Y), economic growth (X₁), life

expectancy (X₂), expected years of schooling (X₃), mean years of schooling (X₄), and per capita expenditure (X₅)

Operating Definitions of Variables

The definitions of variables to be used in this research are as follows.

1. Poverty (Y) means economic inability in fulfilling basic needs as measured from expenditure which is proxied with percentage of the poor population in regencies/cities.
2. Economic growth (X₁) which is proxied with gross regional domestic product on the basis of 2010 constant price in regencies/cities means the total added value generated by all business units in a region as expressed in billion rupiah unit.
3. Life expectancy (X₂) means the average estimation of number of years spent by an individual since birth.
4. Expected years of schooling (X₃) means the duration of schooling (in years) expected to be spent by children at certain ages in the future.
5. Mean years of schooling (X₄) means the number of years used by a population to complete a formal education.
6. Per capita expenditure (X₅) means the per capita expenditure as determined from the value of per capita expenditure and purchasing power parity of a community in rupiah unit.

Data Analysis Technique

The data in this research were analyzed using quantitative analysis. In its calculation, the statistic method uses Eviews Version 11 software. The multiple regression analysis used in this research is panel data regression model. The general form of panel data multiple regression equation is as found in Gujarati (2012) and Baltagi (2005) as follows.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \dots + \beta_n X_{nit} + e_{it}$$

The estimation model of fanel data multiple regression analysis equation in this research is as follows:

$$\text{LogPoor}_{it} = \beta_0 + \beta_1 \text{LogX}_{1it} + \beta_2 \text{LnX}_{2it} + \beta_3 \text{LnX}_{3it} + \beta_4 \text{LnX}_{4it} + \beta_5 \text{LnX}_{5it} + e_{it}$$

Where:

Poor	= Percentage of poor population (percent)
X1	= Gross regional domestic product (Miliar Rupiah)
X2	= Life expectancy
X3	= Expected years of schooling
X4	= Mean years of schooling
X5	= Per capita expenditure
β_0	= Constant/intercept
$\beta_1 - \beta_5$	= Regression coefficient/slope
i	= Regencies/cities in Sulawesi Tengah
t	= Period of time (2016-2020)
e	= error
Log	= Logarithm

This test compares the fixed effect model with the random effect model in determining the best model to be used as a panel data regression model (Gujarati, 2012). The Hausman test uses similar program as the Chow test, i.e., Eviews. The hypotheses formed in the Hausman test are as follows.
 H_0 : Random effect model
 H_1 : Fixed effect model
 H_0 is rejected if the *P*-value is less than a value. Conversely, H_0 is accepted if *P*-value is greater than a value. The a value used is 5%.

Model Determination

Two techniques were used to obtain the right model in estimating the panel data regression, namely:

1. Chow Test

Chow test is the test to compare the common effect model with the fixed effect model (Widarjono, 2009). The Chow test in this research used Eviews program. The hypotheses formed in the Chow test were as follows.

H_0 : Common effect model

H_1 : Fixed effect model

H_0 is rejected if the *P*-value is less than a value. On the contrary, H_0 is accepted if the *P*-value is greater than a value. The a value used is 5%.

2. Hausman Test

Hausman Test

Hausman test is used to select the most appropriate model by comparing the fixed effect model with the random effect model. This test uses an assumption that if the probability value < 0.05, then the right model is

RESULT AND DISCUSSION

Panel Data Model Selection Test:

Chow Test

Chow test is used to select the most appropriate model between the common effect model and the fixed effect model. This test uses an assumption that if the probability value < 0.05, then the right research model is the fixed effect model and if the probability value > 0.05, then the right model is the common effect model. This test uses Eviews version 11, and the following results are obtained.

From the result of Chow test in the table above, a probability cross section random is obtained at 0.0000. The error rate used is 0.05. Thus, the obtained result indicates that the probability value is 0.0000 < 0.05, meaning that the appropriate model to be used is the fixed effect model.

Table 1. Chow Test

Effects Test	Statistic	df	Prob
Cross Section F	600.931110	(12.47)	0.0000
Cross Section Chi-square	327.582831	12	0.0000

Sources: Eviews 11, 2022

the fixed effect model. And if the probability value > 0.05, then the most appropriate model is the random effect model. This test uses Eviews10 application and the following result is obtained.

Table 2. Hausman Test

Test Summary	Chi-square Statistic	Chi-square df	Prob
Cross Section Random	9.46006	5	0.0920

Sources: Eviews 11, 2022

Fixed Effect Model Regression Test

Based on the panel regression estimation using the fixed effect model, the following result is obtained.

The regression equation of the fixed effect model is as follows.

$$Y_{it} = -17,548275 - 0,279138 X1_{it} + 4,321416X2_{it} + 0,694073X3_{it} - 4,974918X4_{it} + 2,101407X5_{it} + e_{it}$$

The constant value is -17.54830, indicating that if the value of independent variables (economic growth, life expectancy, expected years of schooling, mean years of schooling, per capita expenditure) is 0 or constant, then the value of poverty rate is 17.54830.

1. The regression coefficient of economic growth (X1) variable is -0.279138 with negative sign. This means that economic growth has a negative correlation with poverty rate in regencies/cities in Central Sulawesi Province. It indicates that every one percent increase in economic growth (X1) will decrease the poverty rate (Y) by 0.279138 diin regencies/cities in Central Sulawesi Province, assuming that other independent variables of the regression model is constant.
2. The regression coefficient of life expectancy (X2) variable is 4.321416 with positive sign, indicating that life expectancy has a unidirectional correlation with poverty rate in regencies/cities in Central Sulawesi Province. This means that every one percent increase in life expectancy will increase the poverty rate in regencies/cities in Central Sulawesi Province by 4.321416.
3. The regression coefficient of expected years of schooling (X3) variable is 0.694073 with positive sign, indicating that expected years of schooling has a unidirectional correlation with poverty rate in regencies/cities in Central Sulawesi Province. This means that every one percent increase in expected years of schooling will increase the poverty rate in regencies/cities in Central Sulawesi Province by 0.694073.
4. The regression coefficient of mean years of schooling (X4) variable is -4.974918 with negative sign, indicating that mean years of schooling has a non-unidirectional correlation with poverty rate in regencies/cities in Central Sulawesi Province. This means that every one percent

increase in mean years of schooling will decrease the poverty rate in regencies/cities in Central Sulawesi Province by 4.974918.

5. The regression coefficient of per capita expenditure (X5) variable is 2.101407, with positive sign, indicating that per capita expenditure has a unidirectional correlation with the poverty rate in regencies/cities in Central Sulawesi Province. This means that every one percent increase in per capita expenditure will increase the poverty rate in regencies/cities in Central Sulawesi Province by 2.101407.

Coefficient Determination

The coefficient value is determined to discover the contribution that independent variables (X) can make in affecting the dependent variable (Y) as measured by percentage. Based on the result of test which has been conducted, the R-Squared value obtained is 0.558275. This means that around 55.83% of poverty can be explained by independent variables in this research, namely human development index and economic growth. Meanwhile, the remaining 44.17% is explained by other variables beyond the model or not included in this research.

Hypothesis Testing of t-Statistic Test

The t-statistic test is conducted to discover the partial influence of independent variables on the dependent variable by comparing the t-statistic with the t-table value. To figure out the t-table value, $\alpha=0.05$ is sought for with a degree of freedom (df) = n- k- 1. With a significance test of 0.05, the t-table value is obtained at 1.895. Therefore, the results of hypothesis testing are as follows:

1. Economic growth, its t-score is -4.764181, where t-score \geq t-table (-4.764181 \geq 1.895), meaning that partially there is negative and significant influence between economic growth and poverty rate in regencies/cities in Central Sulawesi Province.
2. Life expectancy, its t-score is 2.795778, where t-score \geq t-table (2.795778 \geq 1.895), meaning that partially there is significant influence between life expectancy and poverty rate in regencies/cities in Central Sulawesi Province.
3. Expected years of schooling, its t-score is 0.448695, where t-score \leq t-table (0.448695 \leq 1.895), meaning that partially there is no significant influence between

- expected years of schooling and poverty rate in Central Sulawesi Province.
4. Mean years of schooling, its t-score is -5.378833, where $t\text{-score} \geq t\text{-table}$ ($-5.378833 \geq 1.895$), meaning that partially there is negative and significant influence between mean years of schooling and poverty rate in Central Sulawesi Province.
 5. Per capita expenditure, its t-score is 4.875972, where $t\text{-score} \geq t\text{-table}$ ($4.875972 \geq 1.895$), meaning that partially there is significant influence between per capita expenditure and poverty rate in Central Sulawesi Province.

F-Statistic Test

F-Statistic test is conducted to prove empirically the influence of human development index and economic growth on the number of poor population in Central Sulawesi Province. The hypotheses are simultaneously tested by considering the probability value to discover the influence of independent variables collectively on the dependent variable. From the research results, the F-score value is found at 14.91343 with a probability value of 0.000000, where this probability value is less than the error rate of 0.05. This means that there is a significant influence between dependent variable and independent variables.

Influence of Economic Growth on Poverty Rate

The research results indicate that economic growth has a negative and significant influence on poverty rate in Central Sulawesi Province. This means that as economic growth increases, the poverty rate in regencies/cities in Central Sulawesi Province decreases. This research result confirms the research conducted by Deby Oktaviana (2021), Padambo et al., (2021), and Hutajulu (2021).

Kuznet in Tambunan (2001) suggests that economic growth negatively correlates with poverty, i.e. if the economic growth increases the poverty rate decreases. Miller's relative poverty (Arsyad, 2010) states that when the population's economic condition improves due to inflation, the poverty line will change and poverty will remain.

Influence of Life Expectancy on Poverty rate

The research results indicate that life expectancy, mean years of schooling and per capita expenditure positively and significantly affect poverty rate in regencies/cities in Central

Sulawesi Province. This means that the human resources in a region improves, the quality of human resources in the relevant region is affected. In turn, this will affect the productivity of these human resources. This research result is consistent with the research conducted by Maulana and Alamsyah (2021) and Fikri and Suparyati (2017). Successfully lower the death rate of mother and children during birth delivery process and increase the number of public health centers and maternity hospital in every regency and city to reduce mother and child death rate. This is because mother and child death rate is one of indicators in life expectancy.

Influence of Expected Years of Schooling on Poverty Rate

The research results indicate that expected years of schooling has no significant influence on poverty rate in regencies/cities in Central Sulawesi Province. Todaro (2013) suggests that the education structure applicable in a region is influenced by the socioeconomic characteristics of its people. To increase the expected years of schooling, the government should immediately provide educational assistance to high-achievers from poor families, improve educational facilities evenly across Indonesia and facilitation and training programs to improve people's skills and expertise.

Influence of Mean Years of Schooling on Poverty rate

Mean years of schooling has no influence on poverty rate in regencies/cities in Central Sulawesi Province. This research result is consistent with the research conducted by Pradipta and Dewi (2020). The low quality of human resources affects people's knowledge and skills, resulting in low productivity. The lower the educational attainment the lower the chance of getting jobs which eventually leads to poverty as the basic needs are unfulfilled.

Influence of Per Capita Expenditure on Poverty Rate

The research result indicates that per capita expenditure positively and significantly affects poverty rate in regencies/cities in Central Sulawesi Province. Per capita expenditure shows people's purchasing power. People with relatively great expenditure could fulfill most of their needs. As basic needs are fulfilled, people can improve their welfare.

Engel in Salvatore (2006) argues that the higher the income of a family, the lower their expenditure percentage for food consumption would be.

CONCLUSION AND SUGGESTION

Economic growth, life expectancy, mean years of schooling and per capita expenditure have significant influence on poverty rate in regencies/cities in Central Sulawesi Province. Meanwhile, expected years of schooling has no influence on poverty rate in regencies/cities in Central Sulawesi Province.

To mitigate the poverty rate constant reference to pro-poor, pro-job, and pro-growth policies should be maintained and job vacancy need to be expanded. Regency/city government could increase the realization of spending budget allocation such as school and teacher availabilities, administer nonformal education which can increase workers' productivity, provide health facilities such as hospital, public health center and secondary public health center, and health personnel, public infrastructure and education assistance such as providing training on creativity in cooperatives and micro-, small-, and medium-enterprises (MSMEs) which survive during the current COVID-19 pandemic and eventually support the sustainable human development.

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