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The Impact of Population, Labor, Unemployment, and Poverty on Economic Growth Regencies/Municipality in Sulawesi Tengah Province

Muhammad Syahrul Mubarak*, Nugroho SBM
Departments of Economic Development, Faculty of Economics and Business, Universitas Diponegoro, Indonesia
*Corresponding author: syahrulmuhammad13@outlook.com

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Abstrak

High population growth could be a serious barrier to regional economic development. In general, if productivity in each sector of the economy is very low, there will be a high unemployment level in that society. The purpose of this study is to analyze the partial and simultaneous influences of population, labor, unemployment, and poverty on economic growth. The type of data used is panel statistic data from 11 regencies and municipality in Sulawesi Tengah province of Indonesia during the 2011-2019 period with 99 observations. The regression model with fixed effect approach was used to analyze the data panel. The results reveal that labor and unemployment do not significantly affect economic growth, whereas population and poverty significantly affect economic growth in positive and negative ways, respectively. The partial results of the test imply that the increase in population must be coherently supported by the specialization of the workforce through an increase in the length of school each individual. These implications can be realized through the construction of educational infrastructure. Poverty reduction can be implemented through the improvement of the education level of the people. It is expected that good education will generate more new experts to increase industrial productivity, which in turn will increase the output

INTRODUCTION

Regional development has the goal of prospering the community. To achieve these goals, a plan is needed in regional development. The plan in question is planning that is carried out evenly throughout the whole area and must be felt by all people without exception. Development planning can be carried out through the development of human capital or community development in a region. According to Esmara (2005) that development is not only pursuing outward progress, such as food, clothing, housing, health, etc., or inner satisfaction such as education, security, freedom of opinion, justice, etc. but harmony, harmony, and balance between the two; that development is evenly distributed throughout the country.

There are several components in measuring the development of an area described by Esmara (2005), namely economic growth that is measured quantitatively which describes the economic development of a region in a given year compared to the previous year, population, employment opportunities, equity, and public welfare. The component of measurement of development is by the opinion of Sukirno (2006) which states that economic development is economic growth coupled with the development of education, technological

development, improvement in health, improvement in infrastructure, and an increase in the income and prosperity of society.

Table 1. Gross Regional Domestic Product at 2010 Constant Market Prices by Industry in Sulawesi Tengah Province (Percent)

Sektor	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3
Agriculture, Forestry, and Fishery	6.58	6.08	2.05	5.07	3.28	(0.93)
Mining and Quarrying	4.02	8.97	2.69	15.69	12.64	14.66
Manufacturing	5.73	11.17	9.76	12.47	7.85	7.76
Electricity and Gas	11.98	11.11	(3.47)	0.09	(2.08)	(1.56)
Water Supply, Sewerage, Waste Management, and Remediation Activities	7.17	6.81	(0.26)	3.62	(4.63)	(1.66)
Contruction	0.69	2.39	15.90	4.32	15.60	17.35
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	8.23	7.77	(2.54)	0.74	0.68	2.56
Transportation and Storage	8.29	7.45	7.98	5.96	0.87	2.85
Accomodation and Food Service Activities	9.45	9.80	(4.65)	(3.60)	(5.17)	(5.14)
Information and Communication	8.99	9.64	9.92	11.96	9.81	9.87
Financial and Isurance Activities	6.77	2.43	(8.39)	(5.11)	(4.31)	(0.05)
Real Estate Activities	7.70	6.85	(0.40)	(7.14)	(2.34)	(1.01)
Business Activities	7.10	5.81	3.53	4.29	5.43	4.67
Public Administration and Defence, Compulsory Social Security	12.36	5.82	17.31	5.94	8.57	6.72
Education	8.54	6.19	(1.45)	1.08	1.69	0.61
Human Health and Social Work Activities	6.83	6.56	18.05	9.82	12.46	10.96
Other Services Activities	7.87	6.76	(1.12)	(0.51)	3.00	1.79
GRDP	6.20	7.05	5.37	6.79	6.48	6.07

Source: Bank Indonesia

Table 1 shows the condition of the development of economic growth in the province of Sulawesi Tengah, in the third quarter of 2019 showed 6.07%, slowed compared to the previous quarter of 6.79% in the first quarter, and 6.48% in the second quarter of 2019. The slowdown in economic growth was caused by a decline in performance in the agricultural sector, especially in food crops due to supporting facilities such as irrigation that has not been optimal after the Palu disaster in 2018. Also, the decline in the performance of the agricultural sector is triggered by the dry season (Bank Indonesia, 2019).

A region, such as Indonesia has the policy to improve national development which is realized by economic growth through local governments, both from the regency/municipality government and from the provincial government. The policy is contained in the policy of regional autonomy according to Law No. 32 of 2004 concerning the definition of regional autonomy, the right of authority, and the obligation of autonomous regions to regulate and manage their government affairs and the interests of the local community by applicable laws and regulations (Wulandari, 2018).

The regional autonomy policy is in line with the development plan that is Bottom Up, namely the screening of community aspirations starting from the

smallest layers of society, at the village or urban village level. Then, upward at the sub-district level, to the district and provincial level, to the end the central government, through the village level musrenbang, Unit Daerah Kerja Pembangunan (UDKP) or regional development work unit, regency/municipality level musrenbang, and national level musrenbang. Musrenbang or musyawarah perencanaan Pembangunan is a forum between actors in the framework of developing development plans both at the national and regional levels (Muljarijadi, 2011).

Table 2. Gross Regional Domestic Product at 2010 Constant Market Prices by Regency/Municipality in Sulawesi Tengah Province (billion rupiahs), 2018-2019

Regency/Municipality	Year	
	2018	2019
Regency		
Banggai Kepulauan	2.614,26	2.777,00
Banggai	18.409,02	19.724,81
Morowali	15.020,62	17.199,83
Poso	6.098,00	6.475,83
Donggala	8.169,96	8.623,08
Toli-toli	5.471,68	5.736,41
Buol	3.919,07	4.077,27
Parigi Moutong	11.658,01	12.152,77
Tojo Una-una	3.712,46	3.924,08
Sigi	6.024,93	6.260,62
Banggai Laut	1.645,72	1.748,02
Morowali Utara	7.163,19	7.911,62
Municipality		
Palu	15.323,73	16.026,16

Source: Provinsi Sulawesi Tengah Dalam Angka (2020: 695)

Bottom planning refers to the potential economic sector in a region that can improve the central economy. The theory that discusses the potential sector of the region is the Export Base Theory which divides the regional system into two parts, namely the area concerned and other regions. The potential sector has a role as the main driver in the growth of a region. The greater the export of an area to another region will be more advanced the growth of the region, and vice versa (Adisasmita, 2005).

Based on table 2 in 2018, Banggai Regency had the highest GRDP value of 18.409,02 million rupiahs and continues in 2019 with a GRDP of 19.724,81 million rupiahs. The capital city of Sulawesi Tengah Province itself, namely the City of Palu has the second-largest GRDP value after Banggai Regency which is equal to 15.323,73 million rupiahs in 2018 and accelerated growth in 2019 which is equal to 16.026,16 million rupiahs.

Table 3. Land Area (Km2), Population (Thousand) and Mean Years of Schooling (Years) by regency/Municipality in Sulawesi Tengah, 2019

Regency/Municipality	Land Area	Population	Mean Years of Schooling
Regency			
Banggai Kepulauan	2,488.79	118.40	8.19
Banggai	9,672.70	376.81	8.24
Morowali	3,037.04	121.30	9.11
Poso	7,112.25	256.39	9.36
Donggala	4,275.08	304.11	7.86
Toli-toli	4,079.77	235.80	8.26
Buol	4,043.57	162.18	8.75
Parigi Moutong	5,089.91	490.92	7.47
Tojo Una-una	5,721.51	153.99	8.36
Sigi	5,196.02	239.42	8.53
Banggai Laut	725,67	75.00	8.51
Morowali Utara	10,004.28	128.32	8.70
Municipality			
Palu	395.06	397.38	11.60
Sulawesi Tengah		3 054.02	8.75

Source: Badan Pusat Statistik Provinsi Sulawesi Tengah

A component in national development, namely an increase in the rate of economic growth of a region. The improvement of the economy is inseparable from the rate of population growth. According to Mankiw, et. Al. (2013:61-63) a large population means that more workers to perform the production of goods and services. At the same time, it also means more people doing the consumption of goods and services. However, the high population could reduce GDP per worker because of rapid population growth increasing the supply of labor capital, so each worker provided with less capital. A small amount of capital per worker walks on declining productivity and GDP per worker.

Other problems related to population and economic growth in capital formation, especially human resource capital. The assumption that educational achievement is very low in an area with a high population. That is, the population has a high number of school-age children is high, so the condition weighs on the education system. Table 3 shows that the region has the highest population, namely Parigi Moutong regency with a population of as many as 490 million with mean years of schooling inhabitants are very low i.e. 7 years. That is, the average population in the Parigi Moutong Regency degree just completed studies at the primary school level.

Different data are shown by Palu City, although the population of the Palu City is ranked second after Parigi Moutong regency amounted to 397 million people, the average population of the old school Palu is in the highest position when compared to other regencies in Sulawesi Tengah province over the 11 years the average population of the town of Palu studies degree. However, other counties have a population of a little when compared with the Parigi Moutong and Palu, average population studies education only up to 8 or 9 years old. That means 9 Regencies in Sulawesi Tengah province in addition to the Parigi

Moutong regency and Palu municipality, the average population could not complete education in junior high school levels and senior high school levels.

Table 4. Population Aged 15 Years and Over by Regency/Municipality and Type of Activity During The Previous Week in Sulawesi Tengah Province (person), 2019

Regency/Municipality	Economically Active		Total
	Working	Unemployment	
Regency			
Banggai Kepulauan	60,398	1,246	61,644
Banggai	181,949	4,097	186,046
Morowali	52,354	1,634	53,988
Poso	134,817	3,104	137,921
Donggala	135,367	3,915	139,282
Toli-toli	101,435	3,308	104,743
Buol	70,206	2,961	73,167
Parigi Moutong	230,893	5,617	236,510
Tojo Una-una	82,569	2,530	85,099
Sigi	116,816	3,131	119,947
Banggai Laut	32,634	1,027	33,661
Morowali Utara	58,798	1,895	60,693
Municipality			
Palu	181,523	12,337	193,860
Sulawesi Tengah	1,439,756	46,802	1,486,561

Source: Provinsi Sulawesi Tengah Dalam Angka (2020: 97)

Achievement of the formation of human capital that is projected by the mean years of schooling has a contribution to the development of the region. The longer someone drove his education then in the long term the someone can contribute to sectors of the economy as labor. That outputs a region depends on the number of residents who act as labor. The number of labor employed increases, then the wages will rise and wage increases are encouraging an increase in the welfare of society but can also encourage the growth of additional residents. Conversely, if the amount of the demand for labor decreases, then the level of wages will decrease and will eventually be at a minimal level (Sukirno, 2006).

Table 4 shows that the number of residents who work the highest in Sulawesi Tengah province at Parigi Moutong as much as 230,893 people, whereas in the second is Banggai regency who works as much as 181,949 people. While the Palu as the capital city of Sulawesi Tengah province, the number of residents who work as many as 181,523 people, but the number of unemployment highest if compared to other counties that show numbers, 12,337 people. While unemployment Parigi Moutong regency as much 5,617 people. These data indicate that in urban areas the rate of unemployment is still classified as high. The high unemployment figures could have been caused by the development of the population. According to Sukirno (2006), the development of a high population is a barrier to economic development in an area. These conditions would be created if the productivity in every sector of the economy is very low and within the community, there is a lot of unemployment.

Hapsari and Deden (2018) explain the relationship between population and economic growth in their study entitled *Analisis Faktor-Faktor Yang Mempengaruhi Pertumbuhan Ekonomi Provinsi Jawa Tengah Periode 2010-2014*. The factors referred to as an input of production activities on economic growth in the Central Java include capital expenditure, private investment, population, education, and health. The results of the analysis show that the population has a significant positive relationship with economic growth in the Central Java. Cruz and Amer (2018) research on The Impact Of Demographic Change on Economic Growth and Poverty. Demographic changes are measured by changes in age structure. The results of his research indicate that the number of the working-age population has a positive relationship to GDP per capita.

Different results were shown by Sandhika and Mulyo (2012) who examined *Analisis Pengaruh Aglomerasi, Tenaga Kerja, Jumlah Penduduk, dan Modal Terhadap Pertumbuhan Ekonomi Kabupaten Kendal*. The results of the analysis show that there is no influence between the number of workers on economic growth. While the population has a negative influence on economic growth. Bakari, Mabroukib, and Othmani (2018) who examined the Six Linkages between Foreign Direct Investment, Domestic Investment, Exports, Imports, Labor Force and Economic Growth: New Empirical and Policy Analysis From Nigeria stated that there is no relationship between labor force variables in the long run on economic growth. Whereas Jonaidi (2012) examined *analisis pertumbuhan ekonomi dan kemiskinan di Indonesia* concluded that the unemployment rate has a negative relationship with economic growth and poverty has a negative correlation with economic growth. Novriansyah (2018) with a study entitled *Analisis Pengaruh Pengangguran dan Kemiskinan Terhadap Pertumbuhan Ekonomi Di Provinsi Gorontalo* states that there is a negative relationship between unemployment with economic growth and poverty has a negative relationship with economic growth.

Ziberi and Avdiu (2020) analyzed the Econometric Analysis to Examine the Relationship between unemployment and Macroeconomics Aggregates: Evidence from Kosovo explained that there was a negative relationship between unemployment and economic growth. The results of the analysis of Moore and John (2016) on Human-Scale Economics: Economic Growth and Poverty Reduction in Northeastern Thailand provide the conclusion that accelerating economic growth can reduce poverty levels. Meanwhile, according to Niyimbanira (2017) the title raised is Analysis of the Impact of Economic Growth on Income Inequality and Poverty in South Africa: The Case of Mpumalanga Province. The results of his research show that there is no direct or insignificant relationship between economic growth and poverty.

Previous studies have focused on the relationship of inputs of production activities (capital) as an independent variable on economic growth, while in this study including economic problems such as unemployment and poverty as independent variables. Besides, the position of the poverty variable in the previous study was the dependent variable, whereas in this study the poverty variable would be an independent variable. So this study wants to show the relationship between the input of production activities (population and labor) and economic problems (unemployment and poverty) on economic growth. The purpose of this study is to determine the effect of population, labor, unemployment, and poverty

simultaneously and partially on the economic growth of Sulawesi Tengah Province.

RESEARCH METHOD

The location or scope of the object of this research consisted of 11 regencies and cities in Sulawesi Tengah Province namely Banggai Kepulauan Regency, Banggai Regency, Morowali Regency, Poso Regency, Donggala Regency, Toli-toli Regency, Buol Regency, Parigi Moutong Regency, Tojo Una-una Regency, Sigi Regency, and Palu City. From the 11 districts and cities, it can be seen how much the relationship between population, labor, unemployment, and poverty levels to the economic growth of Sulawesi Tengah Province from 2011 to 2019.

Data obtained from the literature or secondary data relating to population, labor, unemployment, poverty, and economic growth were sourced from the Badan Pusat Statistik Provinsi Sulawesi Tengah from 2011 to 2019 (nine years) based on regency, and with the number of observations as many as 99 observations.

The analysis technique that will be used is starting with the formation of a mathematical model, which is a mathematical statement used to determine the effect of the independent variable (X) on the dependent variable (Y), namely the prevailing relationship between population, labor, unemployment and poverty levels on growth economy.

In determining the functional relationship between one independent variable and the dependent variable can be done by estimating the panel data regression model with several approaches, namely pooled OLS model, fixed-effect model, and random effect (REM) model. The estimation of the data panel regression model is derived based on the following Cobb-Douglas equation (Todaro and Smith: 2006):

$$Y = f(K, L) \quad (1)$$

where Y is output, K is capital accumulation, and L is labor. So the equation for the data panel is as follows:

$$GRDP = f(POP, LAB, UN, POV) \quad (2)$$

Where, GRDP is a gross regional domestic product based on 2010 constant prices based on regency and municipality with thousand rupiahs, POP is the number of people with a thousand persons, LAB is the working-age population (15 years and over) who work in a thousand persons, UN is a working-age population (15 years and over) who do not have a job or unemployment with a thousand persons, and POV is several poor people with thousands of persons.

Then the equation is entered into the form of estimation panel data regression model as follows,

$$Yt = \beta 0 + \beta 1\, X1t + \beta 2\, X2t + \beta 3\, X3t + \beta 4\, X4t + et \quad (3)$$

Where, (Yt) is economic growth, (X1t) is the population, (X2t) is labor, (X3t) is unemployment, and (X4t) is the level of poverty. Whereas β0 is an interceptor or constant, β1, β2, β3, β4 are regression coefficients and et is the standard error.

There are several approaches to estimating these equations namely pooled OLS model, fixed-effect model, and random effect model (REM). To determine which approach should be selected for panel data regression, then some testing is needed, namely first, test the significance of the fixed effect or better known as the Chow test, and the second Hausman test (Kennedy: 2003).

If the choice of approach in the panel data regression estimation model has been done, then a classic assumption test is needed so that the estimator in the model is the best, linear, and unbiased estimator (best linear unbiased estimator - BLUE). The testing of classical assumptions that will be applied in this model is a heteroscedasticity test and a multicollinearity test.

Heteroscedasticity is if the disturbance variable has a variant that is not constant in regression, so the accuracy of the production results becomes dubious. The consequence is that heteroscedasticity in the regression model is an estimator that is needed inefficient, both in small samples and in large samples. Although the estimator obtained describes the population (not biased) and the increase in the sample used will be close to a consistent value (the variation is no minimum). A good regression model is that homoskedasticity or residuals have the same variance or heteroscedasticity does not occur.

The method that can be done to detect the presence or absence of heteroscedasticity in the model is by doing the Glejser test. The Glejser test is done by regressing the absolute value of the residual to the independent variable. Assuming that if the independent variable is significant at α = 5% then the model is suspected to be indicated by a problem of heteroscedasticity and vice versa, if the probability value of the independent variable > of the significance level at α = 5%, then the model is suspected to have no heteroscedasticity problem.

Multicollinearity can be detected in a regression model if there are pairs of independent variables that are strongly correlated with each other in the variables. With the presence of multicollinearity, the standard errors for each of the coefficients that are grieved will be very large. Finally, the value of t will below. Another result is that the influence of each of the explanatory variables on Y cannot be described or detected. To detect the presence of multicollinearity, it is necessary to analyze the correlation coefficient between explanatory variables, for example between X1, X2, and X3. If a high correlation coefficient appears, multicollinearity can be expected. Multicollinearity tests can be seen from tolerance value (TOL) and variance-inflating factor (VIF). If the TOL value is greater than 0.10 or the VIF value is smaller than 10, it can be concluded that there is no multicollinearity.

Also, a simultaneous test or F test is conducted which aims to determine the effect of independent variables on the dependent variable. The rules of the form of the hypothesis are if F count> F table at 95% confidence level (α = 0.05), then it is proven jointly that the population, labor, unemployment, and poverty levels have a significant effect on economic growth (Ho rejected and Hi accepted). Conversely, if F count <F table at a confidence level of 95% (α = 0.05), then it is proven jointly that population, labor, unemployment and poverty levels do not have a significant effect on economic growth (Ho accepted).

After that, a partial test or t-test is needed to determine whether or not each significant regression coefficient on the dependent variable. By assuming the other independent variables are constant, the hypothesis formed is as follows,

Ho : bi = b

Ho : bi ≠ b (4)

where bi is the i coefficient of the independent variable with the hypothetical parameter value is usually b considered = 0. This means there is no effect of the Xi variable on Y. If the value is t-count> t-table, then at a certain level of

confidence Ho is rejected. This means that the independent variables tested significantly influence the dependent variable.

RESULTS AND DISCUSSION

For the data panel estimation to be said BLUE, the detection that is done is the heteroscedasticity detection and multicollinearity detection. The autocorrelation test is not included in the panel data regression model because this test looks at the correlation between the disturbance variables one observation with another observation or the observation of year t is influenced by the previous year t. Thus, the autocorrelation test only fits the times series data with the number of observations of more than thirty observations and the autocorrelation test panel data cannot be done. According to Widarjono (2007), the element of autocorrelation is often found in sequential data of time due to the existence of a variable correlation of disturbances between times. In addition to the autocorrelation test, the normality test also cannot be done on the panel data regression model, due to differences in the average value of the estimator in the data of each district and city in Central Sulawesi Province. According to Gujarati and Dawn (2010), if the purpose of the study is to estimate the point parameters of a regression model that does not make assumptions about the probability distribution of the disturbance factor (ui), it will be considered adequate. However, if the purpose of the study is to estimate and make conclusions about the population, it is necessary to assume that ui follows a normal distribution with zero mean values and constant variances δ2.

Chow Test

The test results of the significance of the fixed effect or Chow test are used to determine the comparison of panel data regression techniques with the fixed effect better than the common effect model. According to table 5, the prob value of cross-section F is 0.0000 and the value of prob chi-square is 0.0000. That is, the value is smaller than α = 5%, so the null hypothesis is rejected (H0 is rejected). So, the best panel data regression model used is the fixed effect approach model.

Table 5. Chow Test

Redundant Fixed Effect Test Test cross-section fixed effect			
Effects Test	Statistic	d.f.	Prob
Cross-section F	25.144046	(10,84)	0.0000
Cross-section Chi-square	137.078139	10	0.0000

Hausman Test

The Hausman test is conducted to see the most appropriate estimation technique in the panel data regression model, which is between fixed effects and random effects. Based on table 6 of the Hausman test which shows prob numbers. The random cross-section is 0.0000 which is smaller than alpha 5%. This means that the null hypothesis is rejected or H0 is rejected. Based on the results of the Hausman test, the right approach in the panel data regression model is the fixed effect model.

Table 6. Hausman Test

Correlated Random Effect – Hausman Test			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob
Cross-section random	44.541961	4	0.0000

Fixed Effect Approach

After going through the Chow and Hausman Test to choose the right panel data regression estimation technique from three approaches, OLS (Common) method, fixed effect model and random effect model. Then the estimated panel data regression model based on the fixed effect approach is as follows,

Table 7. Estimation Results of Regression Model Panel Data Fixed Effect Approach

Dependent Variable: Y				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-24745395	5398552.	-4.583710	0.0000
X1	169768.5	23548.24	7.209390	0.0000
X2	11.38221	24.62996	0.462129	0.6452
X3	-203.2406	132.6417	-1.532252	0.1292
X4	-288445.4	68414.76	-4.216129	0.0001
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.877077	Mean dependent var		6741344.
Adjusted R-squared	0.856590	S.D. dependent var		4439623.
F-statistic	42.81110			
Prob(F-statistic)	0.000000			

Tabel 8. Equation of Regression Model Panel Data Fixed Effect Approach

PDRB = -2474 + 1697 POP + 11.38 LAB – 203.2406 UN – 2884 POV				
(-4.58)**	(7.20)**	(0.46)	(-1.53)	(-4.21)**
Explanation				
()*** Significant at level α = 1%				
()** Significant at level α = 5%				

The fixed effect regression model assumes the difference in intercepts in the equation. This condition is based on the existence of intercept differences between regency, and municipality in Sulawesi Tengah Province, but the intercepts are the same between times. The model assumes that the regression coefficient (slope) remains between regency, and municipality in Sulawesi Tengah Province and between times.

Detection of Heteroscedasticity

Based on table 9, it is found that the independent variables, namely the population, labor, unemployment, and the number of poor people statistically through the t-test are not significant. That is, the regression results with the Glejser detection method do not contain heteroscedasticity problems.

Tabel 9. Heteroscedasticity Test by Glejser Method

Dependent Variable: ABSRES				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4615431.	3165996.	1.457813	0.1486
X1	-17412.87	13809.93	-1.260895	0.2108
X2	2.143693	14.44431	0.148411	0.8824
X3	-64.81096	77.78812	-0.833173	0.4071
X4	21502.30	40122.03	0.535923	0.5934

Detection of Multicollinearity

The results of the multicollinearity detection analysis in table 10 showed that the correlation coefficient between independent variables <0.95. This means that there is no multicollinearity problem in each independent variable, namely between population (X1), labor (X2), unemployment (X3), and poverty (X4).

Tabel 10. The Correlation Coefficient Between Population (X1), Labor (X2), Unemployment (X3) and Poverty (X4)

	Y	X1	X2	X3	X4
Y	1.000000	0.568606	0.553932	0.481688	0.124666
X1	0.568606	1.000000	0.956305	0.715515	0.697387
X2	0.553932	0.956305	1.000000	0.688889	0.723156
X3	0.481688	0.715515	0.688889	1.000000	0.229383
X4	0.124666	0.697387	0.723156	0.229383	1.000000

Simultaneous Test (F-statistic)

Table 7 reports F-count> F-Table that is 42.81 > 3.32 at α = 5%. That is, that simultaneously or jointly the independent variables influence the dependent variable and statistically, the four independent variables namely population, labor, unemployment, and poverty can predict the economic growth of the regency/municipality of Sulawesi Tengah Province.

Partial Test (T-statistic)

Based on table 11, variables that have a partially significant influence on economic growth (Y) in Sulawesi Tengah Province are population variables (X1) with t-count> t-table or 7.2093 > 1.645 at a significance level of α = 5% and Poverty variable (X4) with tcount> t-table or -4.2161 > -1.645 with a significance level of α = 5%. While the variable labor (X3) and unemployment (X4) does not have a partially significant effect on economic growth (Y) regency/municipality of Sulawesi Tengah Province because of t-count <t-table at the significance level α = 5%.

Table 11. Partial Test (t-statistic)

Variable	t-statistic	t-table	Prob.
X1	7.209390	1.645	0.0000
X2	0.462129	1.645	0.6452
X3	-1.532252	-1.645	0.1292
X4	-4.216129	-1.645	0.0001

Coefficient of Determination

The coefficient of determination (R2) in table 7 showed determine the degree of closeness of the relationship between the independent variable and the dependent variable indicated by the value R2. Based on the results of the regression with the panel data regression estimation model, the fixed effect approach, the R2 value is 0.8770 or 87.7%, meaning that 87.7% of the variation in economic growth can be explained by population, labor, unemployment, and poverty levels. While 12.3% is explained by other variables outside of the model.

The Impact of Population on Economic Growth

Based on table 8 shows that the population has a positive relationship with a value of elasticity of 1697. That is, if the population (X1) increases by 1 million, it will increase economic growth (Y) by 1697 (thousand rupiah units). The influence of the population on economic growth shows that an increase in population can accelerate the rate of economic growth in Sulawesi Tengah Province. The statement is by the opinions of Hapsari and Deden (2018), namely that the addition of population can lead to an acceleration in the rate of economic growth in Central Java Province, this is caused by almost half the population absorbed in high productivity-based employment. According to the statement from Cruz and Amer (2018), an increase in the number of working-age population can accelerate economic growth through improvements in human development, in the form of increasing the educational attainment of every resident. improvements in human development are key in increasing per capita income and reducing poverty. However, a different statement was stated by Sandhika and Mulyo (2012), that in 19 sub-districts in Kendal Regency, if an increase in population would cause a slowdown in the economic growth rate of Kendal Regency.

A positive relationship between population and economic growth, by the theory put forward by one of the classical economists Adam Smith concerning the factors that determine development. Smith believes that an increase in population growth will encourage economic development. One of the factors that determine the acceleration of economic growth in Central Sulawesi Province is the population. The statement must follow t assumptions, if the increase in population will give birth to new technology experts so that the division of labor or specialization can be done between labor, so that labor productivity increases, then industrial productivity also increases and can increase regional income.

The Impact of Labor on Economic Growth

The impact of the labor on economic growth on table 8 shows that there is no significant effect on α = 5% between labor variables (X2) on the economic growth variable (Y) with a probability of 0.6452. The estimation results are according to the opinion of Sandhika and Mulyo (2012) which states that there is no influence between labor and economic growth. Similar results are shown by Bakari, Mabroukib, and Othmani (2018) wherein the long run the variable of labor does not have a significant relationship to economic growth. The absence of this relationship is caused by the low profitability of workers. According to Pancawati (2000), to analyze changes in labor, the capital-labor ratio variable is needed.

The ratio of capital-labor explains about the amount of capital distributed to each workforce in a production process. The greater the capital-labor ratio, the greater the distribution of capital in each workforce. The increase in the distribution of capital in the workforce indicates that the production process goes towards capital-intensive production. While the Keynesian theory states that if the number of the labor force increases, the output must also increase, due to maintaining full employment conditions (full employment) in an area.

There are several factors which are the assumptions that there is no relationship between labor and economic growth in Sulawesi Tengah Province. First, the availability of labor both in terms of demand and supply is influenced by the population. That is, if an area has a low population and abundant natural resources, it will increase profits for investors who will invest in the area. That is, with the availability of human resources (in this case illustrated by the population) and natural resources, it will create a high level of capital formation. So that product increases will occur and encourage labor demand.

The second assumption is the relationship of labor with economic growth must go through market conditions in an area projected by several sectors such as the agricultural sector, industrial sector, and the service sector. If the market conditions develop, there will be a division of labor and specialization of work between workers. However, this condition will not occur if there is no investment in human resources, in this case, the knowledge obtained by the workforce. In the case of Sulawesi Tengah Province itself, science can be described by the average length of the school. In 2017, the average length of school for residents of Sulawesi Tengah Province only reached eight years. The longer the population takes the education path so that in the long run the population will present new ideas about the best ways to produce goods and services. This new idea will later create a division of labor and specialization between labor.

The Impact of Unemployment on Economic Growth

Based on table 8 found that the unemployment variable (X3) does not have a significant effect on α = 5% with a probability of 0.1292 for the variable economic growth (Y). The estimation results are not by the opinion of Jonaidi (2012) which analyzes economic growth in Indonesia, Ziberi and Avdiu (2020)

which analyzes unemployment and macroeconomics aggregates in Kosovo and Novriansyah (2018) which analyzes economic growth in Gorontalo Province, which states that an increase in unemployment will cause a slowdown in the rate of economic growth. Whereas Mohseni and Jouzaryan (2016) explained that in Iran unemployment has a significant negative relationship in the long run and short run to economic growth. With a similar statement expressed by Arthur Okun in Okun's Law's theory which states that if there is an acceleration in economic growth, the unemployment rate can be lowered.

The estimation results regarding the absence of a relationship between unemployment and economic growth are not by previous research and Okun's Law theory, due to the size of unemployment in Sulawesi Tengah Province itself. That is, it is very difficult to distinguish between someone who does not work with someone who is not included in the workforce. Every time, there is a movement of people entering and leaving the workforce. Like young workers who are looking for their first job, for example, young workers who have just completed their studies at the university level. At the same time senior workers left the workforce, but on the other time returned to the workforce to find work. As a result of the frequent influx of people in the workforce, unemployment statistics are very difficult to interpret.

The Impact of Poverty on Economic Growth

Table 8 shows that the poverty level (X4) has a negative relationship with an elasticity value of 2884 towards economic growth (Y). That is, if the poverty rate (X4) in Sulawesi Tengah Province rises by 1 million people it will reduce the rate of economic growth (Y) in Sulawesi Tengah Province by 2884 (thousand units).

The estimation results show that there is a negative influence between poverty and economic growth, according to the opinion of Novriansyah (2018) which analyzes Gorontalo provinces and Jonaidi (2012) with research objects in Indonesia, according to him that if there is an increase in poverty rates it will cause a slowdown in the rate of economic growth. Whereas according to Moore and John (2016), the acceleration of economic growth can overcome the problem of poverty in a region, by presenting economic opportunities in the sectors based on the region. As for the economic opportunities in question, namely in the form of human resource development and the development of increased production by promoting high technology in the production of goods or services. accelerating economic growth in a region translates that the region can create economic opportunities to reduce poverty. But the results of the analysis from Niyimbanira (2017) show different conditions, namely, there is no direct relationship between economic growth and poverty levels. The relationship between poverty and economic growth must exceed per capita income.

The existence of a negative relationship between poverty variables on economic growth variables in Sulawesi Tengah Province, by the theory of the

vicious circle of poverty. The theory states that the high poverty rate in an area is caused by a slowdown in economic growth in the region (Nixson: 2001).

This condition causes the poverty level to be one of the obstacles to increasing economic growth in Sulawesi tengah Province. The occurrence of poverty is caused by several factors, namely the high flow of urbanization, high unemployment, low levels of per capita income, and a lack of educated workforce and entrepreneurs in the Sulawesi Tengah Province.

Sulawesi Tengah Province has abundant natural resources but has not been fully utilized as a potential sector in each district and city. Natural resources that have not been fully utilized, are caused by the relatively low level of education of the people, the required experts are still limited and resource mobility is also limited.

CONCLUSION

Based on the results of the analysis described above, several points can be concluded, namely, first, simultaneously, or together with the variables of population, labor, unemployment, and poverty can predict the economic growth of Sulawesi Tengah Province. This is evidenced by the results of the estimation of the panel data regression model with the fixed effect approach obtained by F-count> F-Table which is 42.81 > 3.32 at $\alpha = 5\%$.

Second, partially, labor has no relationship with economic growth in Sulawesi Tengah Province, due to the lack of experts absorbed by various economic sectors such as the agricultural sector, industrial sector, and service sector. The unemployment rate also has no relationship with economic growth in Sulawesi Tengah Province due to population outflows in the labor force so that the size of the unemployment statistics is difficult to interpret. A significant relationship is indicated by the population and poverty level. The increasing population will increase economic growth significantly. But the economic growth will slow down significantly if there is an increase in the poverty level.

Based on these conclusions, the authors provide several policy recommendations to encourage economic growth, especially in the Regency/Municipality of Sulawesi Tengah Province. First, to increase the population with the assumption that the increase in population must be accompanied by the birth of technology experts, the role of the government is to issue policies related to education infrastructure in the form of increasing the construction of senior secondary schools in the district, especially in rural areas, given what table 3 shows the average length of school in the district is in the range of six to eight years which is far below the average length of school in Palu, which is 11 years. Secondly, it is necessary to equalize the number of teachers in the district to adjust the number of schools in the district. According to the Badan Pusat Statistik (2018), the number of high school educators in the Palu municipality is far greater when compared to the regency with a total of 13 schools and a total of 717 educators, whereas in the area of the Banggai regency there are 30 schools but the number of workers the educator is a little that is equal to 677. Second, the Sulawesi Tengah government should create

opportunities for employment opportunities for the population, so that population increases can be accompanied by the birth of new experts. Such opportunities can be realized such as entrepreneurship training for the community, especially in rural areas, so that the resources in the districts and cities can be fully utilized and can become a potential sector in the region.

This research is far from perfect because it still has limitations. Such as, time-series data or time series that have a short period, namely eight years from 2011 to 2019 and several districts in Sulawesi Tengah Province such as the Banggai Laut and Morowali regencies that are not included in the observation because they are still in the expansion stage. The short period and the number of cross-sections entered are only 11 regency/municipality, so the estimation results are less able to explain the phenomenon of economic growth accurately over a longer period. Also, the labor variable only measures the number of the working-age population (15 years and above) based on the activities of the past week. In some studies, for the labor variable using the indicator of the working-age population (15 years and above) based on the highest education completed, assuming that the higher the average length of schooling of labor, the quality of labor can increase economic growth. In further research, it is expected to use labor variables with indicators of the working-age population (15 years and above) based on the highest education attained, namely diploma, academy (DIII), university, and S2 / S3.

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