

Quality Economic Growth: Is It Possible to Achieve by An Archipelago Area?

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KEYWORDS

quality economic growth;
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ABSTRACT

The purpose of this study, the researcher uses descriptive and verifiable analysis methods. Verifiable analysis through panel data regression analysis, by choosing the best approach from the Common Effect Model, Fixed Effect Model or Random Effect Model. The research variables consisted of natural resource factors (F_SDA) in the primary sector which were proxied from the contribution of the agriculture, forestry and fisheries sectors as well as the mining and quarrying sector to GDP, Foreign Investment (FDI), Government Expenditure (Blj_P), Average School Length (R_LS), Population Growth (Pert_Pduk) as free variables and Economic Growth (Pert_Ek) and Employment Opportunity Rate (TKK). Secondary data was obtained from BPS, the Ministry of Finance of the Republic of Indonesia, SatuData of the Ministry of Manpower. The type of data is panel data that was studied during the time period 2010 to 2019. The results of the study show that relatively high economic growth in areas with archipelagic characteristics does not have an impact on increasing employment opportunities. The F_SDA and FDI variables have no effect on economic growth in archipelagic areas, the Blj_P variables are influential and significant, while Pert_Pduk have an effect but not significantly on economic growth in archipelagic areas. The human resource factor variable that is proxied from the average of a long time (R_LS) has an effect but is negative and significant on economic growth in the archipelago. Overall, from this study, it was found that economic growth in the archipelago during the period from 2010 to 2019 was 'nt of good quality.

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Introduction

Economic growth is one of the indicators of the success of the economic development of a country or region. As a measure of success, stakeholders generally set a certain percentage figure as a growth target that shows the direction and amount of economic development activities to be achieved in a certain period of time. According to

(Boediono, 2012), economic growth is defined as the process of increasing per capita output in the long term. The definition of economic growth as referred to contains three aspects, namely; *First*, it is a process (economic aspect) where an economy develops or changes from time to time. *Second*, economic growth is related to the increase in per capita output, in this case the total output produced is divided by the total population. *Third*, economic growth is associated with the perspective of time, where the economy is said to grow if in the long term there is an increase in per capita output.

In another sense, Simon Kuznets defines economic growth as a long-term increase in a country's ability to provide types of economic goods to its residents, (Jhingan, 2014). This capacity building grows in accordance with technological advances and necessary institutional and ideological adjustments. This definition of *Kuznets* refers to three important components, *first*; that the continuous increase in the inventory of goods is the result of economic growth. *Second*; the role of technology further increases the ability to produce various goods needed by the population and *third*; changes in production methods that are more effective and efficient with the use of technology that is increasingly developed accompanied by institutional and ideological adjustments that affect each other with technological changes so that the innovations carried out can be used appropriately. As Kuznets argues, previously (Todaro & Smith, 2011), stated that there are 3 factors that are general requirements for economic development, namely; 1) Capital accumulation, including the accumulation of new capital in the form of land, physical equipment and human resources, 2) Population growth accompanied by labor growth and improvement of skills, and 3) Technological advancement.

The overall output of goods and services produced in the country's economy, including the income of foreigners in the country, is national income which can be seen with data on Gross Domestic Product/Gross Regional Domestic Product (GDP/GDP), (Mankiw, 2004). Economic growth is measured by the increase in total output every year, namely; Final GDP minus initial GDP divided by initial GDP multiplied by one hundred. According to classical economic theory, this growth occurs due to the number of population, the number of capital goods, the area of land and natural resources, and the technology used. Meanwhile, the views of neoclassical economists are influenced by three main factors, namely labor, capital and technology factors. Both classical and neoclassical economic growth theories each have different determinants of economic growth, such as in the classical economic growth theory pioneered by *Adam Smith* emphasizes that the number of people greatly affects economic growth, while *David Ricardo* It is of the view that with technological advances and sufficient capital accumulation, an increase in labor productivity will be achieved, which will ultimately become the main driver of economic growth. The neoclassical economic growth theory, pioneered by (Solow, 1956), emphasizes that the accumulation of physical capital is very important for economic growth in the short term, and the aspect of technological progress determines for the long term (Chirwa & Odhiambo, 2016). The neoclassical growth model was further developed by (Mankiw et al., 1992) who included human capital stock as the main determinant of economic growth in addition to the accumulation of physical capital. Meanwhile, *Schumpeter* with his theory that the improvement of the economy of a country or region is if economic actors make innovations and new combinations both in the production process and business investment. In addition to economic factors, several studies have found that non-economic factors, such as; political, cultural, ideological, institutional, religious, and ethnic aspects also contribute to influencing economic growth (Hakim & Subanti, 2019).

A number of economic growth theories put forward by experts, generally aim to achieve the maximum level of increase in output of every economic activity in a country or region. Economic development aimed at achieving growth targets is carried out with a number of different strategic choices about what to build and how to do it. This difference is in accordance with the conditions, potential, and capacity of resources possessed to intervene in factors whose impact contributes to economic improvement. According to (Becker, 1993), investment in human resources in improving knowledge, skills, competencies and other attributes plays a role in economic growth, while Barro (1991) sees the aspect of improving health affecting economic growth. While Joseph Schumpeter believes that technological progress is largely determined by the entrepreneurial spirit of the community who is able to see business opportunities and expand businesses, it means that intervention in increasing the capacity of the workforce is a priority scale in development activities.

High and continuous economic growth is highly expected to ensure the sustainability of economic development and population welfare. High growth indicates great economic activity, encouraging the expansion of employment opportunities so that job opportunities for everyone are more open, especially for countries with a large population and always increasing every year require the availability of large jobs, (Tambunan, 2016). Residents who have jobs get a source of income to finance a decent life, the increase in income increases people's purchasing power so as to encourage an increase in consumption. The increase in consumption activities of each individual in aggregate has increased national income. Therefore, high economic growth in the long term is urgently needed to facilitate economic development activities. According to (Todaro, 1999) in the long term, the internal process of a country's economy produces a change in the economy itself from a certain level to a higher level, this change is called economic growth. Economic growth is *self-generating* where the internal process of the economy encourages an increase in output per capita as economic growth, this increase in output further adds to the strength of the economy which ultimately encourages growth in the following periods (Chalid, 2015).

The increase in the economic growth rate at the same time encourages the expansion of employment opportunities for the population so that every workforce has a working status, this condition is actually the success of achieving the goals of economic development. According to (Gilarso, 2004) employment is the many jobs available for the labor force, each individual who works obtains an additional source of income which can be shown by an increase in per capita income. This economic process not only targets high growth but also an equal distribution of income to the population, referred to as quality economic growth. According to (Indrawati, 2007), *pro-growth economic management* is expected to be able to encourage the acceleration of economic growth accompanied by equal distribution of income (*growth with equity*). Although the main goal of achieving a high economic growth target is not enough to guarantee that people's welfare will increase evenly. Therefore, quality economic growth occurs when the rate of economic growth increases accompanied by an increase in the equitable distribution of income so that the results of growth can reach and be enjoyed by all levels of society.

The increase in job opportunities increases production capacity which increases the output of the state or regional economy. An increase in the working workforce will reduce the unemployment rate and increase the income received by each individual, thereby reducing the poverty rate. In countries with economic processes that target quality economic growth, it is a path of transformation from a society that is shackled in

underdevelopment to a more advanced society, (Stiglitz, 2000) (Handoko, 2001) (Prasetyo, 2008).

The economic policy launched in 2008 with the concept of *growth with equity*, (Indrawati, 2007) set three main targets, namely: 1) accelerating quality economic growth (*pro growth*) with the support of maintained economic stability; 2) reducing unemployment (*pro-job*); and 3) reducing poverty (*pro-poor*). Empirical evidence, as shown in Figure 1.1, from 2010 to 2019 shows a downward trend in the economic growth rate, although in 2008 it was at 6.06%, but after 2010 to 2019 there was a consistent decline for the next 10 years.

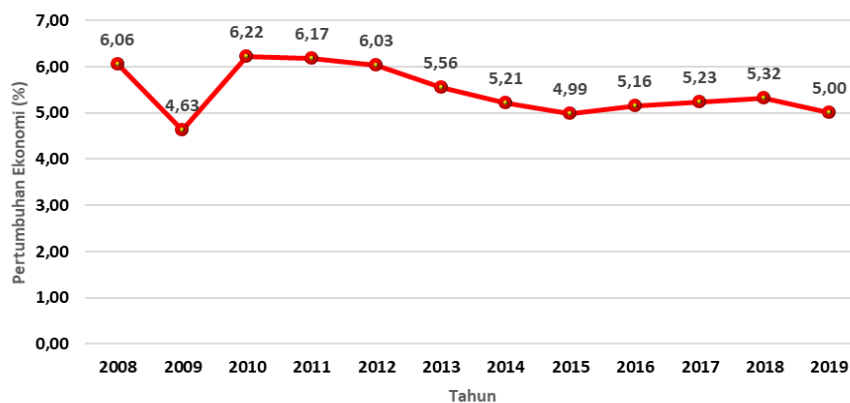


Figure 1 Indonesia's GDP Growth Rate (%) (Year 2008-2019)

Source : BPS, Indonesia (2008-2019)

In the archipelago-characterized areas (DBK), consisting of the Riau Islands (Riau Islands), Bangka Belitung Islands (Babel), West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), North Sulawesi (North Sulawesi), Southeast Sulawesi (Sulawesi), Maluku, and North Maluku (Malut), (Ardini, 2022), it can be shown that there is a relationship between the rate of economic growth and the unemployment rate and poverty rate. Based on data presented by the Central Statistics Agency, the declining economic growth of the Riau Islands in 2011, 2013, 2014, and 2016 encouraged an increase in the unemployment rate and an increase in the poverty rate, while the increase in economic growth in 2012, 2018 and 2019 encouraged a decrease in the unemployment rate and reduced the poverty rate in the following year. Likewise, it can be seen that the increase in the rate of economic growth in Babel in 2011 caused the unemployment graph to decrease and reduce the number of poverty rates, on the contrary, the decline in the growth rate from 2012 to 2015 encouraged an increase in the unemployment rate and increased the number of poverty rates in Babel. Different conditions are shown by 4 areas with archipelagic characteristics in the eastern part of Indonesia. Maluku has a high average economic growth rate (6.02%), a high unemployment rate (8.61%) as well as a fairly high poverty rate (19.88%), North Maluku with a relatively high average economic growth rate (6.72%), a moderate unemployment rate (5.06%) accompanied by a moderate poverty rate (7.57%). NTB with a low economic growth rate even minus in 2011, 2012 and 2018 with an average (2.22%) moderate unemployment rate (4.70%) with a fairly high poverty rate (17.23%) while NTT has a moderate economic growth rate (5.24%) with a relatively low unemployment rate (3.23%) but a fairly high poverty rate with an average (21.17%).

The economic conditions of Maluku, North Maluku and NTT as seen from macro indicators show inconsistent conditions when referring to the theory put forward by

Arthur Okun known as "Okun's Law" explaining the negative relationship between the unemployment rate and GDP growth, where if GDP increases, the unemployment rate will decrease. In the condition that GDP does not grow, the unemployment rate will remain the same and or will even increase by 1.5% from the previous condition (Mankiw, 2006:248, translated by Haris Munandar, 2006). In Okun's law states that for every 2% decline in GDP from its potential GDP, the unemployment rate will rise by 1%, (Astuti, 2016).

In Malthus' theory, it is concluded that to achieve development, the State must maximize production in the agricultural sector and the industrial sector (Jhingan, 2014). These two sectors absorb more labor so that they contribute to reducing the unemployment rate. The economic structure of the archipelago in the western part of Indonesia relies on the processing industry sector as the main base of its economy, while in the eastern part of the archipelago of Indonesia, the economic base is in the agriculture, forestry and fisheries sectors. Although these two sectors open up more job opportunities, the per capita income obtained is much different between the archipelago in the west and the east. There are four regions with the lowest GDP per capita during the 2010-2019 time period, all four are archipelago-characterized areas in eastern Indonesia, namely; NTB, NTT, Maluku and North Maluku with an average GDP per capita, respectively of Rp. 21.57 million, Rp. 15.99 million, Rp. 19.24 million, and Rp. 22.44 million.

The archipelago has a huge potential for marine and fishery resources, according to the Decree of the Minister of Marine Affairs and Fisheries Number 19 of 2022 concerning Estimated Potential, Allowable Catch, and Level of Utilization of Fish Resources in the State Fisheries Management Area of the Republic of Indonesia, stating that the amount of sustainable potential for fish resources is 12,011,125 tons per year. Meanwhile, according to KKP data, the utilization of Indonesia's marine fisheries potential has only reached 77.11%. Ironically, two archipelago-characterized regions in the western part of Indonesia have an economic base in the processing industry sector and in the eastern part of Indonesia; NTB, NTT, Maluku and North Maluku do focus on the agriculture, forestry and fisheries sectors, but the dominant subsectors are agriculture, plantations, livestock and other agricultural services, while the management of natural resources in the fisheries subsector is still on a small scale.

The level of accessibility and connectivity between islands limited by the sea leads to slow and less smooth movement of economic activities and relatively more expensive mobility costs for goods and services. This difficult accessibility and connectivity causes the distribution of income to be uneven (Alfarizi Siregar, 2022). The condition of the archipelago, which is divided into several large and small islands with different levels of population density even without inhabitants, requires varying time in the implementation of services and development evenly throughout the region. The consequence of this condition is the need for large financing both for daily life activities and for development activities in the archipelago. With the level of difficulty, accessibility and connectivity between islands, the pattern of economic growth in archipelagic areas is centered on only one or a few islands that are the center of economic growth. The concentration of growth on one or several islands alone causes a strengthening of the *backwash effect* and a weakening of the *spread effect* of economic development activities, as referred to by Swedish economist, Gunnar Myrdal (Jhingan, 2000).

Areas with archipelagic characteristics are generally underdeveloped areas in various development progresses. The natural resources owned cannot be used as a superior input factor in regional economic development. Barriers to accessibility and

limited connectivity are factors that contribute to the low economic output produced. In this study, an analysis was carried out to the extent of quality economic growth that can be achieved by archipelagic regions in Indonesia and the dominant factors that determine quality economic growth in archipelagic areas. The policy of pursuing high economic growth without an increase in open employment opportunities and an increase in per capita income is an inappropriate policy in realizing the development goals themselves.

The novelty for this research in its focus on analyzing economic growth specifically within the archipelagic regions of Indonesia. Previous studies have generally concentrated on more comprehensive economic contexts or specific sectors within broader regions. By zeroing in on archipelagic areas, this study addresses a significant gap in the literature, providing insights into regions that have unique economic characteristics and challenges due to their geographic fragmentation. Additionally, unlike traditional studies that primarily measure economic growth by GDP or per capita income, this research emphasizes "quality economic growth." This approach not only considers the increase in economic output but also factors in the equitable distribution of income, improvement in employment opportunities, and reduction in poverty levels. By integrating these aspects, the study offers a more holistic view of economic progress, ensuring that growth is inclusive and beneficial to all segments of the population. This novel perspective is particularly relevant for archipelagic regions where economic disparities are often pronounced, and accessibility and connectivity issues can hinder equitable development. The purpose of this study, the researcher uses descriptive and verifiable analysis methods.

Research Methods

The data analysis methods used in this study are descriptive and verifiable analysis. Verifiable analysis through panel data regression analysis, by choosing the best approach from the Common Effect Model, Fixed Effect Model or Random Effect Model. Meanwhile, the data processing tool uses Microsoft excel and Eviews 12 software. The research variables consisted of Natural Resources Factors (F_SDA) of the primary sector which were proxied from the contribution of the agriculture, forestry and fisheries sectors as well as the mining and quarrying sector to GDP, Investment sourced from Foreign Investment (FDI), Government Expenditure (Blj_P) which was direct expenditure of local governments, Human resource factors proxied from the Average School Length (R_LS) data, Population Growth (Pert_Pduk) as a free variable and Economic Growth (Pert_Ek), Employment Opportunity Rate (TKK) and Per Capita Income (PDRB_k) as bound variables. The data analysis method is carried out in stages; to examine the influence of F_SDA, PMA, Blj_P, R_LS, Pert_Pduk on Pert_Ek both simultaneously and partially, and their impact on TKK.

The analysis stage is carried out with equation-1; namely examining the influence of variables F_SDA, PMA, Blj_P, R_LS, Pert_Pduk on Pert_Ek, equation-2; namely examining the impact of Pert_Ek on TKK.

The sample of this study is the archipelago-characterized areas in Indonesia consisting of the Riau Islands Province, Bangka Belitung Islands, North Sulawesi, Southeast Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku and North Maluku.

The type of data used is panel data during the time period of 2010-2019. The data time series includes data on the rate of economic growth, the contribution of the agriculture, forestry and fisheries sectors as well as the mining and quarrying sector, total

foreign investment investment, total direct expenditure, average length of schooling, population growth percentage, GDP per capita and employment opportunity rate from 2010-2019, while the cross section covers 8 regions with archipelagic characteristics in Indonesia. The data source comes from the Central Statistics Agency, Ministry of Finance of the Republic of Indonesia, SatuData Ministry of Manpower.

Results and Discussions

Based on the results of the descriptive analysis, the regional economic growth variables with archipelagic characteristics showed a mean value of 5.5785000, a median of 5.950000, maximum and minimum values of 10.63000 and -4.460000 respectively with a standard deviation of 2.263051. The variable GDP per capita is 35.01350 with a median of 25.91000, the maximum GDP per capita is 119.4000 and the minimum is 9.320000 with a standard deviation of 25.39762. Meanwhile, the variable of the employment opportunity rate, the mean value is 94.50425, the median is 94.70500, the maximum value is 97.40000 and the minimum is 89.49000 with a standard deviation of 2.044438.

Table 1. Descriptive Statistics

	<u>Pert_Ek</u>	<u>F_SDA</u>	<u>PMA</u>	<u>Blj_P</u>	<u>R_LS</u>	<u>Pert_Pduk</u>	<u>PDRB_k</u>	<u>TKK</u>
Mean	5.578500	32.51788	256.1850	1415.565	8.162375	1.987375	35.01350	94.50425
Median	5.950000	32.26500	145.5000	1055.650	8.295000	1.970000	25.91000	94.70500
Maximum	10.63000	56.63000	1363.400	3436.020	9.990000	4.950000	119.4000	97.40000
Minimum	-4.460000	6.140000	2.900000	410.7500	5.730000	0.910000	9.320000	89.49000
Std. Dev.	2.263051	9.202429	281.7009	879.5193	1.071269	0.702040	25.39762	2.044438
Observations	80	80	80	80	80	80	80	80

Source : Data in Processing

Cumulatively, the average economic growth of the archipelago was 5.58% during 2010-2019, above the national average of 5.49%. The highest economic growth rate of 10.63% was achieved by Southeast Sulawesi in 2011 and the lowest -4.46% in NTB in 2018. Although in general the development conditions in the western region of Indonesia are more advanced compared to the eastern region, the economic growth rate of the region characterized by the archipelago in the western part, Riau Islands and Babylon with an average of 5.79% and 4.87% is lower than the archipelago in the eastern region, especially Sulawesi, North Sulawesi, Maluku and North Maluku, with an average of 7.45%, 6.31%, 6.02% and 6.72%. Based on data on gross regional domestic product contribution from the Central Statistics Agency, Riau Islands Province has the main economic base in the procurement industry sector, followed by the construction sector and the mining and quarrying sector. The management industry sector is also the economic base of Babel Province, followed by the agriculture, forestry and fisheries sectors as well as mining and quarrying services. The base sectors in these two archipelagos are also under pressure along with the decline in Indonesia's coal and crude oil production in 2015, causing the oil refinery industry to experience negative growth that affects economic growth in general.

Areas characterized by archipelago in the eastern region of Indonesia, actually achieved an economic growth rate that was one digit higher than the national average, which was in the range of 6% - 7%, except for NTB and NTT which were far below the national average. The main economic base of the six regions is characterized by islands in the eastern region in the agriculture, forestry and fisheries sectors. Despite having a fairly high average economic growth, the lowest GDP per capita (minimum 9.320000)

was found in East Nusa Tenggara in 2010, even the four regions with the lowest GDP per capita during 2010-2019 were all archipelago areas (NTT, Maluku, NTB and North Maluku).

Quality economic growth indicated by an increase in economic growth followed by an increase in employment opportunities, descriptively in areas with archipelagic characteristics as shown in Figure 2 does not occur. The rate of increase or slowdown in economic growth is not followed by an increase or decrease in the level of employment opportunities.

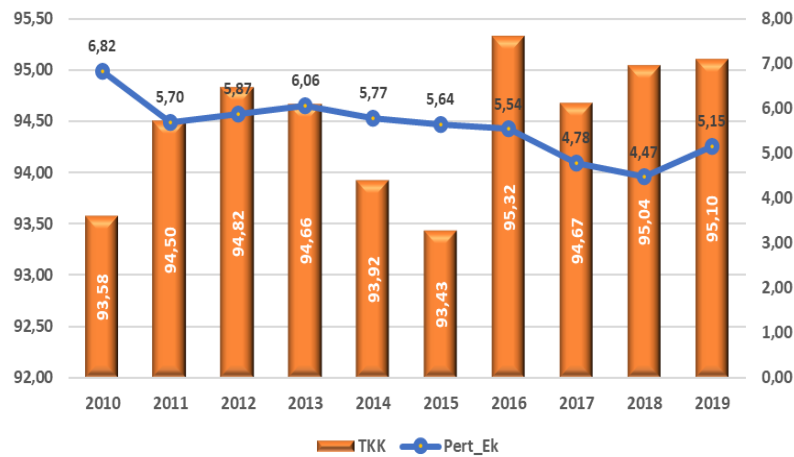


Figure 2 Economic Growth – Job Opportunities in Archipelago Areas

The results of the verifiable analysis, in the model test to compare *the common effect* model with *the fixed effect* model through the Chow test (Table 2), results that in equation-1: $Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk$, the obtained sig value is 0.0423. Since the sig value (0.0423) < 0.05, the appropriate model is a *fixed effect* model. In equation-2: $TKK = c + Pert_Ek$, the obtained sig value is 0.0000. Since the sig value (0.0000) < 0.05, the appropriate model is the *fixed effect* model.

Table 2 Uji Chow

equation 1 ($Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk$)

Redundant Fixed Effects Tests
Pool: POOLDATA
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.232487	(7,66)	0.0423
Cross-section Chi-square	17.000828	7	0.0174

equation -2 ($TKK = c + Pert_Ek$)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	37.255464	(7,71)	0.0000
Cross-section Chi-square	123.345367	7	0.0000

The model test to compare *the fixed effect* model with *the random effect* through the Hausman test (Table 3), results that in the equation-1 $Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk$, the obtained sig value is 0.0162. Since the sig value (0.0162) < 0.05, the appropriate model is *fixed effect*. In equation-2: $TKK = c + Pert_Ek$,

the obtained sig value is 0.5886. Since the sigs value (0.5886) > 0.05, the appropriate model is *random effect*.

Table 3 Uji Hausman

equation 1 (Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk)

Correlated Random Effects - Hausman Test
Pool: POOLDATA
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.573361	6	0.0162

equation 2 (TKK = c + Pert_Ek)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.292532	1	0.5886

Based on the results of the Chow test and the Hausman test on the equation model 1 (Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk) and equation 2 (TKK = c + Pert_Ek), it is concluded that the model suitable for equation 1 is a *fixed effect* model, while for equation 2 it is a *random effect model*. The results of Eviews software processing for multiple regression analysis are presented in table 4 and table 5 below:

Table 4 Multiple Regression Analysis of Equations

Pert_Ek = c + F_SDA + PMA + Blj_P + R_LS + Pert_Pduk

Dependent Variable: Pert_Ek?
Method: Pooled Least Squares
Sample: 2010 2019
Included observations: 10
Cross-sections included: 8
Total pool (balanced) observations: 80

Variable	Coefficient	Std. Error	t-Statistic	Prob.
F_SDA?	-0.795644	0.770880	-1.032123	0.3057
PMA?	-0.297570	0.347807	-0.855562	0.3953
Blj_P?	1.093392	0.515904	2.119370	0.0378
R_LS?	-4.085133	1.980715	-2.062453	0.0430
Pert_Pduk?	0.002940	0.568895	0.005168	0.9959
C	-2.218064	0.219323	-10.11322	0.0000
Fixed Effects (Cross)				
_KEPRI--C	5.227212			
_BABEL--C	-2.192589			
_NTB--C	-4.165294			
_NTT--C	-6.887419			
_SULTENGG--C	2.557204			
_SULUT--C	1.708900			
_MALUKU--C	2.092284			
_MALUKUUTARA--C	1.659701			

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	1.794918	R-squared	0.324970
Mean dependent var	-2.209283	Adjusted R-squared	0.204069
S.D. dependent var	2.198439	S.E. of regression	1.961336
Akaike info criterion	4.332795	Sum squared resid	257.7383
Schwarz criterion	4.719875	Log likelihood	-160.3118
Hannan-Quinn criter.	4.487986	F-statistic	2.687903
Durbin-Watson stat	1.537062	Prob(F-statistic)	0.005172

Based on the results of the calculations in table 4 above, the form of multiple linear regression equations is obtained as follows:

$$\text{Pert_Ek} = -2.218064 - 0.795644 X_1 - 0.297570 X_2 + 1.093392 X_4 - 4.085133 X_5 + 0.002940$$

The results of multiple regression analysis in equation-1 show that the natural resource factors that are proxied from the contribution of the primary sector, the agriculture, forestry and fisheries sector and the mining and quarrying sector with a negative coefficient of (-0.795644), have a calculated t value (-1.032123) > t table (-1.993) have no effect, significant (prob. 0.3057 > 0.05) on the economic growth of the region with archipelagic characteristics. As the economic base in the archipelago, especially the Riau Islands and Babylon, is not in this primary sector but in the processing industry sector. The foreign investment factor with a negative coefficient of (-0.297570), having a calculated t value (-0.855562) > a table t (-1.993) also had no effect, not significant (prob. 0.3953 > 0.05) on economic growth. This shows that the performance of foreign capital investment so far has not been appropriate in sectors that contribute to economic growth in areas with archipelagic characteristics. Foreign investment in capital and technology provides opportunities that increase job opportunities are very minimal for the Indonesian workforce, it is not uncommon for foreign capital investment to demand foreign workers with various convincing arguments.

The direct expenditure factor of local governments with a positive coefficient of (1.093392), has a calculated t value (2.119370) > t table (1,993) has an influence and is significant (prob. 0.0378 < 0.05) on the economic growth of the archipelago. This direct expenditure includes capital expenditure in each provincial region which is intended for the development of basic infrastructure, economic and social infrastructure. With the level of difficulty in accessibility and connectivity in the archipelago, it is often found that the development pattern is centered on one or several islands as the center of economic growth in one province or district/city. The variable of government expenditure is a resource factor that must be distributed to all local governments, provinces and districts/cities as a consequence of the implementation of laws and regulations. This factor is expected to be the main driving force of regional economic activities that directly contribute to encouraging economic growth. The delay in the disbursement of government spending is greatly felt to have an impact on the smooth running of economic activities in the area.

The role of human resources that is proxied from the average length of schooling with a negative coefficient of (-4.085133 X₅), has a t-value (-2.062453) < t table (-1.993) has an influence and is significant (prob. 0.0430 < 0.05) on economic growth in areas with archipelagic characteristics. The facts found in this study are quite interesting judging from the average length of school in table 3.1 above (8.162375) or 8.2 years and the maximum (9.990000) or 10 years, meaning that the majority of people in the archipelago have a maximum of first level education (SMP) of the first grade of high school (SMA). Along with the findings of Prasetyo (2008), that the quality of Indonesia's workforce is still relatively low because it is dominated by high school and junior high school graduates while the labor market is looking for a higher level of education. The dominance of the workforce with a low level of education has an impact on the quality and low level of production produced, which has a negative effect on economic growth. Meanwhile, the population growth variable with a positive coefficient of (0.002940), had

a calculated t-value (0.005168) < t-table (1.993) had an effect but was not significant (prob. 0.9959 > 0.05) on economic growth in the archipelago-characterized area.

Based on the results of the simultaneous test (F test) as in table 4 above, together the variables of natural resources, foreign investment, government spending, average length of schooling and population growth, with a value of f calculation (2.687903) > f table (2.338) and a significance value f calculation as before (0.005172) < 0.05 shows that there is a significant influence on economic growth in areas characterized by islands. The results of the determination analysis can be seen in the output above, the R2 value obtained is 0.324970. This shows that the contribution of natural resources, foreign investment, government spending, average length of schooling and population growth to economic growth is 32.5% while the remaining 67.5% is the contribution of other variables besides natural resources, foreign investment, government spending, average length of schooling and population growth.

Table 5 Multiple Regression Analysis Equation-2

TKK = c + Pert_Ek

Dependent Variable: TKK?
 Method: Pooled EGLS (Cross-section random effects)
 Sample: 2010 2019
 Included observations: 10
 Cross-sections included: 8
 Total pool (balanced) observations: 80
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Pert_Ek?	-0.010663	0.028566	-0.373286	0.7099
C	-0.023558	0.357951	-0.065814	0.9477
Random Effects (Cross)				
_KEPRI--C	-0.573995			
_BABEL--C	0.648328			
_NTB--C	0.391992			
_NTT--C	1.063300			
_SULTENGG--C	0.774597			
_SULUT--C	-1.011659			
_MALUKU--C	-1.500640			
_MALUKUUTARA--C	0.208077			
Effects Specification				
			S.D.	Rho
Cross-section random			0.984617	0.8036
Idiosyncratic random			0.486799	0.1964
Weighted Statistics				
Root MSE	0.478490	R-squared	0.001800	
Mean dependent var	3.19E-15	Adjusted R-squared	-0.010998	
S.D. dependent var	0.481943	S.E. of regression	0.484586	
Sum squared resid	18.31625	F-statistic	0.140618	
Durbin-Watson stat	1.571429	Prob(F-statistic)	0.708685	
Unweighted Statistics				
R-squared	-0.003780	Mean dependent var	2.11E-14	
Sum squared resid	79.29865	Durbin-Watson stat	0.362966	

Based on the results of the calculation in table 5 above, the form of multiple linear regression equations is obtained as follows:

$$TKK = -0.023558 - 0.010663 \text{ Pert_Ek}$$

In this equation-2, the influence of economic growth in archipelagic areas on the employment opportunity rate shows that a negative coefficient of (-0.010663) has a t-

value $(-0.373286) > t$ table (-1.991) has no effect and is significant $(0.7099) > 0.05$) on the employment opportunity rate. This condition shows that there is no impact of the rate of economic growth on the increase or decrease in employment opportunities in archipelagic areas, so that the economic growth that occurs in archipelagic areas based on the results of this study is economic growth that is not or has not been of good quality.

Conclusion

The results of the descriptive analysis illustrate that the economic growth of the archipelago in the eastern region of Indonesia, especially the provinces of Southeast Sulawesi, North Sulawesi, Maluku and North Maluku, is higher than that of the archipelago in the western region of Indonesia (Riau Islands and Bangka Belitung Provinces). Overall, the average growth of archipelagic regions is above the average national economic growth during 2010-2019. Despite having a high growth rate, the GDP per capita of the archipelago in the eastern region of Indonesia is the lowest of all provinces in Indonesia. Based on the economic growth rate graph shown in Figure 3.1, it appears to be inconsistent with the rate of employment opportunities, which shows that there is no correlation between economic growth and the level of employment opportunities in areas with archipelagic characteristics during 2010-2019. In equation-1, the results of the multiple regression analysis of natural resource factors and foreign investment do not have a significant effect on economic growth in archipelagic areas. The local government expenditure factor is an influential and significant variable on the economic growth of the region with archipelagic characteristics. For archipelagic areas that have limited accessibility and connectivity, the existence of local government budgets is a great hope in regional development and improving community welfare through quality economic growth. Meanwhile, the factor of the average length of school has a negative and significant effect on the economic growth of the region with archipelagic characteristics. The condition of the labor force with the majority of the first level of education (junior high school) has an impact on low productivity and can even contribute negatively to economic growth. Population growth in archipelagic areas, in general, is much lower than in non-archipelagic areas. Even on some islands in the area of the area are characterized by uninhabited islands. From the results of the regression analysis, it appears that the population growth factor has an effect on economic growth in the archipelago, but the influence is not significant. Together (simultaneously) the variables of natural resources, foreign investment, government spending, average length of schooling and population growth (F_SDA , PMA , Blj_P , R_LS , $Pert_Pduk$) contribute 32.5% to economic growth ($Pert_Ek$) in areas with archipelagic characteristics while the remaining 67.5% is the contribution of other variables besides natural resource factors, foreign investment, government spending, average length of schooling and population growth. In equation-2 which tests the influence of economic growth variables ($Pert_Ek$) on the level of employment opportunities (TKK), it shows the fact that the rate of economic growth in areas with archipelagic characteristics has no effect on the level of employment opportunities. This condition shows evidence that the increase in the rate of economic growth does not have an impact on the opening of new jobs in the archipelago. Although the economic growth rate in the archipelago, especially in the provinces of Southeast Sulawesi, North Sulawesi, Maluku, and North Maluku, is quite high, it does not have an impact on increasing employment opportunities. Overall, economic growth in the archipelago during the research period of 2010-2019 is not of good quality.

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