



Economic Growth in Indonesian New Autonomous: Social-Economic Perspective

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Abstract

This study explores the Indonesian economic growth in the new autonomous regions using social - economy perspective. More specifically, social - economic issues are proxied on population, poverty rates, education levels, local tax revenues, and distribution of local government social assistance. Meanwhile, community economic growth is proxied by GRDP per capita (PE). The Indonesian economic growth and social-economy issues are measured using Ordinary Least Square (OLS). This study uses new autonomous regions data in Indonesia formed in 2003 – 2008. Employing multiple linear regression, the test results revealed that variable of local tax revenue (PD) was consistently able to explain PE. The same results are shown in the robustness test, where researchers predict the economic growth of the community with the Human Development Index (HDI). In the discussion section, community economic growth represented by PE continues to increase along with the increase in PD and HDI. The conclusion in this study is community economic growth increased since 2009, marked by an increase in PD along with HDI. As an implication, researchers suggest that practitioners and academics use local taxes to measure the community economy in new autonomous regions in Indonesia.

Key words : New Autonomous Regions, Social-Economy Issues, GRDP per Capita, Local Tax Revenue, Human Development

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INTRODUCTION

Regional expansion is a manifestation of the implementation of decentralization of government in Indonesia since 1999 which is regulated in Law no.22/1999. In practice, regional expansion has resulted in many new autonomous regions consisting of new provinces, new regencies and new municipals. In Law no.22/1999 it has been explained that one Province/Regency/Municipal can be divided into two or more new autonomous regions. Meanwhile, the old area which has several fragmented regions is called the main area. Data from the Ministry of Home Affairs shows that from 1999 to 2013 there were 220 new autonomous regions consisting of 8 Provinces, 178 Regencies and 34 Municipals. Historically, the formation of new autonomous regions in the 1999-2013 period is described in Table 1.

The purpose of forming a new autonomous region based on Law no. 22/1999 is to improve the performance of public services and accelerate the welfare of the people which manifests in improving the economy between regions in Indonesia. BAPPENAS & UNDP (2008) have conducted evaluation studies on the division of regions in 10 new regencies that were cursed in 1999 such as Tebo, Sorolangun, East Lampung,

Way Kanan, Bengkayang, Banggai islands, Buol, North Luwu, and Lembata for 5 years (2001 - 2005). However, the results of the study show that GRDP per capita in new autonomous regions tends to fluctuate while parent regions are more stable. These results indicate that the economy of the people living in new autonomous regions is not yet stable. In this study, researchers aimed to re-evaluate the economy of the community in new autonomous regions in Indonesia.

One effort that needs to be done in order to develop the regional economy is to strive for community development in the region (Rodríguez-Pose & Palavicini-Corona, 2013). In the explanation of article 6 Government Regulation no. 78/2007 states that one indicator of community development in the new autonomous region is the growth of Gross Regional Domestic Product (GRDP) per capita which represents an increase in the economic welfare of its people. Meanwhile, the level of economic prosperity of the community is related to the quality of living standards of the people of a country (Rodríguez-Pose & Palavicini-Corona, 2013; Shekarian & Gholizadeh, 2013). This means that community development in new autonomous regions will lead to the goal of improving the quality of life of the people in the area.

Table 1. Formation of new autonomous region from 1999 to 2013

No	New Autonomous Regions	Year										
		1999	2000	2001	2002	2003	2004	2007	2008	2009	2012	2013
1	New province	2	3	-	1	-	1	-	-	-	1	
2	New district	34	-	-	33	48	-	21	26	2	4	10
3	New city	9	-	12	4	1	-	4	4		-	-
	Total	45	10	12	38	49	1	25	30	2	5	10

Source: Ministry of Internal Affair (processed)

Previous studies have reported that gross regional domestic product (GRDP) influences regional finances such as savings, credit, regional income, and regional expenditure (Rahman & Chamelia, 2015). In addition, another study shows that the indicator that is often used in assessing economic welfare in a region is the GRDP (Chansarn, 2014). This study specifically assesses the economy of the new autonomous people using the GRDP per capita benchmark that refers to social-economic theory. This theory was developed by Dalton & Cassel (1924) who studied the continuity between "individual" social problems that had an impact on macro economic problems namely regions and countries. Furthermore, the discussion developed in social-economic theory is how social problems can trigger economic consequences and vice versa.

Implicitly, social-economic theory has been discussed in several previous studies. Firman (2010) argues that the economic welfare is closely related to the independence of the region in obtaining capital to meet all its needs such as the acquisition of local taxes and levies as well as other original legitimate income areas, the ability of people in the region to face rising costs of basic needs, availability of employment, the amount population, and the level of education of the people. Bere, Otoi and Precup (2014) also reported that regional economic growth in the country of Romania was determined by human capital which was proxied by unemployment, population, and population migration. Other studies also explain that the population in Indonesia has a tendency to migrate to other regions due to lack of employment opportunities, lack of public facilities, and difficult access to other welfare (Lu, 2010; Skoufias & Olivieri, 2013). In its development, several studies have also

discussed the issue of social economy connected to the problem of social inclusion (Cace & Stănescu, 2013), community welfare (Lim & Endo, 2016; Fonte & Cucco, 2017), social responsibility (Lee, Byun & Park, 2018), and environmental impacts (Fan, Fang & Zhang, 2019; Luo & Zuo, 2019).

Based on a number of previous studies, this study will analyze the effect of social-economic issues that are proxied by poverty, population, education, tax and social assistance of local governments on the economic growth of the community as proxied by GRDP per capita (PE). The analysis process is carried out by identifying the indicators that affect PE, and discussing the results of testing using a graph of PE growth and its indicators to assess the economic growth of the new autonomous regions community. Robustness test will also be carried out in order to strengthen the analysis results.

Increasing the population can improve the economy of a region. In the "*Causal Loop on Regional Development Dynamic Model*" developed by Faoziyah (2016) shows that an increase in population will improve the economy and this will be followed by an increase in the workforce in an area. In addition, the reception of fiscal transfers to the regions will also be even greater because one of the determining factors is population growth (Crowley & Sobel, 2011). This means, population growth is an indicator of community economic growth in an area. Thus, the hypothesis (H₁) formulated in this study is "the population has a significant positive effect on GRDP per capita".

In general, poverty is a challenge facing all countries and the international community as a whole (Liu, Liu, & Zhou, 2017). In Indonesia, the main contributors to poverty are residents in rural areas who are mostly farmers (Suryahadi, Suryadarma, & Sumarto, 2009). They further explained that the most effective

poverty alleviation strategy was the economic development of rural communities. Other studies have also shown that Indonesia and the Philippines have made great progress in increasing health coverage and maintaining income for the chronic poor in recent years, after decades of neglect (Ramesh, 2014). Thus, the researcher will use poverty indicators to assess the economy of the people in the new autonomous regions in Indonesia. Hypothesis (H₂) formulated in this study is "poverty is a factor inhibiting regional economic growth so that it has a significant negative effect on GRDP per capita growth".

Hromcová & Agnese (2019) have proven that the current era of globalization is the willingness of people to pursue higher education related to the willingness of the labor market to accommodate graduates. Meanwhile, Li & Wu (2018) explained that the level of education represented the quality of human capital owned by the community as an important factor needed by many companies to obtain a quality workforce. Both studies indicate that the level of education is a necessity for business activities in an area. Thus, the level of public education can be used as an indicator of community economic growth in an area. Hypothesis (H₃) formulated in this study is "the population who have taken tertiary education (bachelor) has a significant positive effect on GRDP per capita".

Based on Law no. 28/2009, some local tax revenues in Indonesia include motor vehicle tax, motor vehicle fuel tax, hotel business tax, restaurant business tax, entertainment venue tax, advertisement tax, street lighting tax, nonmetallic mineral business tax, parking tax, water, and land and building taxes. Some of the local tax revenue sources represent the economic capabilities of the people in the area. As Bigio & Zilberman (2011) report that tax is not

only related to business profits but also related to the amount of labor income employed. Vuichard, Stauch & Dällenbach (2019) have also proven that an increase in local resource taxes indicates an increase in community income. Thus, local tax revenue is an indicator of economic growth in the community in an area. The hypothesis (H₄) formulated in this study is "regional tax revenue has a significant positive effect on GRDP per capita".

Dhanani & Islam (2002) argued that in order to cope with social risks intervention from the government was needed in order to improve the stabilization of a country's economy by implementing social protection programs. In Indonesia, regulations on social protection are contained in Government Regulation No. 45/2013 which regulates the distribution of social assistance in the form of consumption assistance, working capital assistance, health insurance and education insurance. This means, social risk management has been implemented in Indonesia in order to improve the economy of its people. Previous studies have proven that social risk management is able to free people from poverty through prevention and mitigation programs (Holzmann & Jørgensen, 2000; Vykopalová, 2016). Thus, the distribution of social assistance by local governments can also be used as an indicator of community economic growth in the region. The hypothesis (H₅) formulated in this study is "the distribution of social assistance has a significant positive effect on GRDP per capita".

This study uses the issue of social economy to re-evaluate the economy of the new autonomous people in Indonesia. Observations focused on population (JP), poverty rate (AK), education level (TP), distribution of social assistance (BS), and local tax revenue (PD). Some of these indicators will be tested whether there is a significant influence on the community's economy which is proxied by GRDP per capita (PE). The results of this study

are expected to provide the latest scientific studies related to the economic growth of the new autonomous peoples in Indonesia.

The conceptual framework of this study can be illustrated in Figure 1.

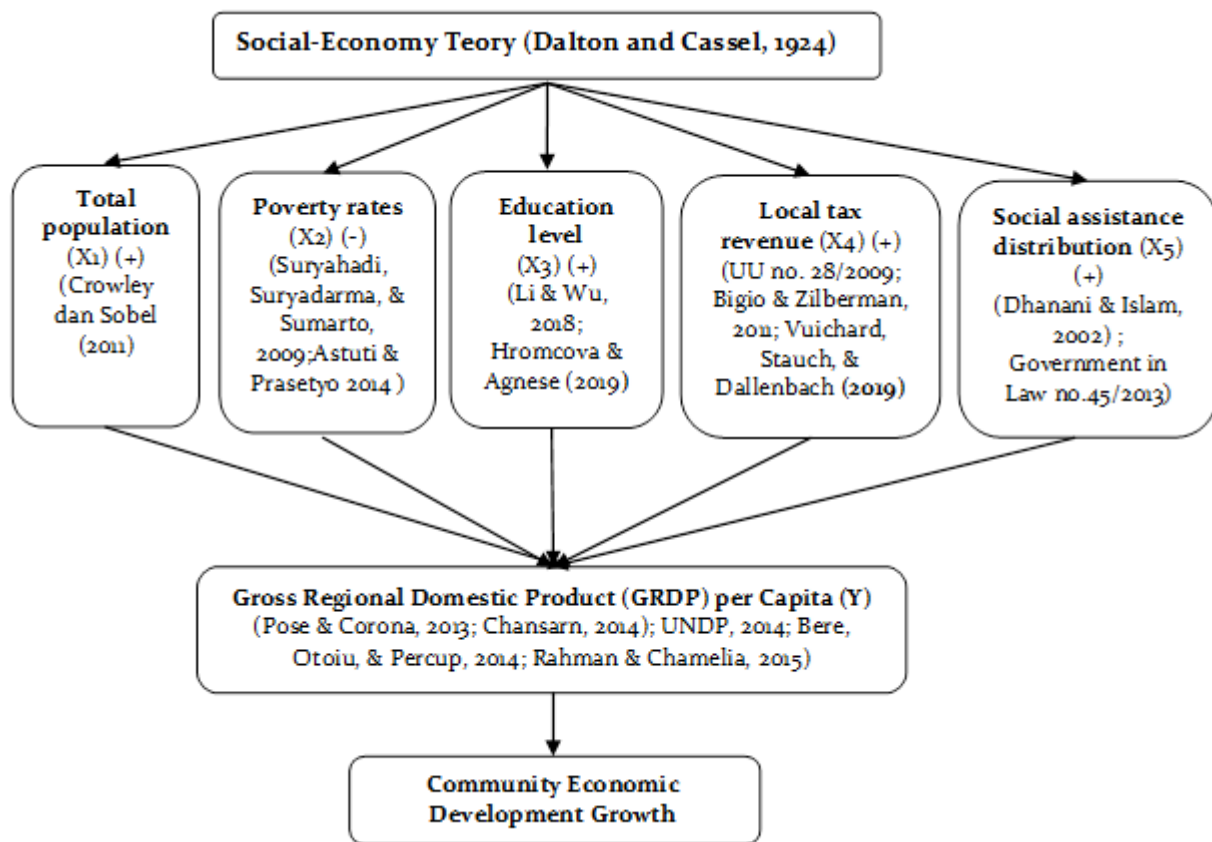


Figure 1. Conceptual Framework

METHOD

Researchers used secondary data, namely regional economic and population publication reports by the Statistical Bureau Office (BPS), publications on regionalism by the Ministry of Home Affairs of the Republic of Indonesia, and new autonomous regional government financial reports released by the Supreme Audit Agency (BPK). Meanwhile, the population is all new autonomous regions in Indonesia. Sampling uses a purposive sampling method that is sampling with certain criteria (Ghozali, 2011). The sample criteria considered by the authors include: 1) New autonomous regions in the Regency category formed in 2003 - 2008, 2)

provides published financial and regional information, and 3) has the necessary data and information.

The dependent variable used in this study is the gross regional domestic product per capita (PE). Meanwhile, the independent variables used are population number (JP), poverty rates (AK), education level (TP), local tax (PD), and distribution of social assistance (BS). Researchers use ordinary least square (OLS) to measure the variables used in this study. Hypothesis testing in this study uses multiple linear regression in which the researcher determines the testing period of six years or more since the establishment of the new autonomous region. This is done so that

the results of the analysis are not biased because before the age of six years or more, new autonomous regions is still in a transition period and is still in the first period of government so that regional development progress cannot be used as a guideline.

Hypothesis testing uses multiple linear regression methods to detect indicators that affect GRDP per capita (PE). This analysis was carried out using benchmarks of simultaneous regression testing (Significance F), benchmarks of partial regression testing (coefficient β), and testing the coefficient of determination (R^2). Testing is broken down into three stages of testing. The analysis process consists of three stages of testing, namely 1) Testing in all selected new autonomous regions. 2) The second phase of testing is carried out by breaking down the testing into three parts based on the year of establishment of the new autonomous regions (2003, 2007, and 2008). In the third stage, testing is carried out on all new autonomous regions per year classified according to the age of new autonomous regions ≥ 6 years. This was done so that all new autonomous regions that were observed had met the age criteria of 6 years or more. Formula 1 is a regression equation for each stage of hypothesis testing.

Hypothesis Test Regression Equations

Stage 1

$$PE_i = \alpha + \beta_1 JP_i + \beta_2 AK_i + \beta_3 TP_i + \beta_4 PD_i + \beta_5 BS_i + \mu$$

Stage 2

$$PE_{i(t)} = \alpha + \beta_1 AK_{i(t)} + \beta_2 JP_{i(t)} + \beta_3 TP_{i(t)} + \beta_4 PD_{i(t)} + \beta_5 BS_{i(t)} + \mu$$

Stage 3

$$PE_{i(n)} = \alpha + \beta_1 AK_{i(n)} + \beta_2 JP_{i(n)} + \beta_3 TP_{i(n)} + \beta_4 PD_{i(n)} + \beta_5 BS_{i(n)} + \mu$$

Where:

PE	=	Logarithm of GRDP value per capita
JP	=	Logarithm total population
AK	=	Logarithms number of poor population
TP	=	Logarithms number of residents educated S ₁ (Bachelor's)
PD	=	Logarithm the amount of local tax revenue
BS	=	Logarithms number of distributed local government social assistance
α	=	Constant
β	=	Coefficient
i	=	Regions of- i
t	=	Year of establishment new autonomous regions
n	=	2014 - 2018

RESULTS AND DISCUSSION

The population of this study has been determined, namely all new autonomous regions formed from 1999 - 2013 consisting of 8 Provinces, 178 Regencies and 34 Cities. Based on the criteria set out in this study, sampling using a purposive method resulted in 73 selected districts with a year of observation from 2009 to 2018. Data observations began since the new autonomous regions was 6 years old. As explained in the reseach method section, new autonomous regions that are still aged up to five years are still in transition and the results of regional development cannot be used as guidelines. In detail, the number of samples and the number of observations of the data can be seen in Table 2.

In the first stage of testing, the results showed the p-value variable population (JP 0,000 under 1% significance, but the coefficient value of the β -coefficient was negative. These results indicate the JP variable has a significant negative effect, so Hypothesis H₁ is rejected. The results shown in the variable number poverty (AK) and social assistance distribution

(BS) show a p-value above 10% which means it does not significantly influence Hypotheses H₂ and H₅ are also rejected in this test Variable levels of education (TP) and local taxes (PD) produce p- values below 5%

along with positive β -coefficient values, meaning Hypotheses H₃ and H₄ are accepted Table 3 shows the results of Stage 1 testing.

Table 2. Sample and Data

Kriteria sampel	Σ
Population (number of new autonomous regions formed 1999 - 2013)	220
(-)New autonomous regions number of Municipal and Province categories	42
(-)Number of districts formed before 2003 and after 2008	83
(-)Data and information are incomplete as needed	22
Total new autonomous regions samples selected	73
Data Observations	
(1) New Regency establishment in 2003 (38 districts x 10 years ^a)	380
(2)New Regency establishment in 2007 (18 districts x 6 years ^b)	108
(3)New Regency establishment in 2008 (17 districts x 5 years ^c)	85
Total data observations	573

Note : The period of observations a: 2009 - 2018, b : 2013-2018, and c: 2014 – 2018

Table 3. Hypothesis Test Results in Stage I^a

Variable	N	B	Sig
C		14.138	0.000
JP	573	-1.914	0.000*
AK	573	0.109	0.343
TP	573	0.202	0.061***
PD	573	0.161	0.000*
BS	573	0.044	0.390
F-Stat			0.000*
R ²		0.184	

Dependent Variable: PE (GRDP per capita)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: a: Testing of all new autonomous regions selected as samples

* Sig. 1%, ** Sig 5%, *** Sig. 10%

In the second stage, the analysis is carried out by classifying the testing based on the year the new District was formed. The test results in the new district that was established in 2003 showed the variable number of population (JP) has a p-value of 0,000 under 1% significance, but the coefficient- β value is negative. Meanwhile, the variable level of education (TP) and local tax (PD) has p-values respectively 0.003

under the significance of 1% and 0.043 under the significance of 5%, positive β -coefficient values. Different results were shown in the testing of new districts formed in 2007 and 2008, only the PD variable had a significant positive effect on the GRDP variable per capita (PE). Overall, the test results at this stage show that only the PD variable has the consistency of the results with previous tests. In detail, the test results are illustrated in Table 4.

Table 4. Hypothesis Test Results in Stage II

Variable	New Autonomous Regions 2003 ^a			New Autonomous Regions 2007 ^b			New Autonomous Regions 2008 ^c		
	N	B	Sig	N	β	Sig	N	β	Sig
C		8.463	0.000		7.889	0.034		7.009	0.031
JP	380	-2.851	0.000*	108	-0.729	0.427	85	-0.322	0.694
AK	380	0.210	0.064	108	0.038	0.832	85	0.013	0.950
TP	380	0.337	0.003*	108	-0.046	0.805	85	-0.169	0.356
PD	380	0.059	0.043**	108	0.221	0.000*	85	0.218	0.013**
BS	380	-0.015	0.587	108	0.115	0.150	85	-0.005	0.951
F-Stat			0.000*			0.000*			0.029**
R ²		0.145			0.296			0.144	

Dependent Variable: PE (GRDP per capita)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: The period of observations a: 2009 - 2018, b : 2013-2018, and c: 2014 - 2018

* Sig. 1%, ** Sig 5%, *** Sig. 10%

Table 5. Hypothesis Test Results in Stage III^a

Variable	N	2014		2015		2016		2017		2018	
		β	Sig	B	Sig	B	Sig	B	Sig	B	Sig
C		8.057	0.034	10.131	0.005	4.118	0.007	9.098	0.001	1.231	0.009
JP	73	-	0.125	-3.423	0.076*	-1.287	0.428	-4.271	0.005	0.559	0.699
		3.166			**				*		
AK	73	0.320	0.362	0.117	0.769	-	0.136	0.850	0.001*	-	0.254
						0.396				0.358	
TP	73	0.418	0.271	0.440	0.123	0.475	0.144	0.526	0.152	-0.381	0.202
PD	73	0.225	0.070	0.305	0.013*	0.264	0.025	0.421	0.001*	0.355	0.006*
			***		*		**				
BS	73	0.061	0.768	-0.291	0.116	0.153	0.349	-	0.839	0.068	0.693
								0.029			
F-Stat			0.000		0.000*		0.000		0.000		0.005*
			*				*		*		
R ²		0.203		0.271		0.211		0.263		0.207	

Dependent variabel : PE (PDRB per Kapita)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: a: Testing all new autonomous regions per year with criteria ≥ 6 years

* Sig. $\leq 1\%$, ** Sig $\leq 5\%$, *** Sig. 10%

In the third stage, researchers try to test the data of all new autonomous regions that are observed annually together. Tests are classified from 2014 to 2018 so that the new autonomous regions formation in 2008

meets the age criteria ≥ 6 years. Table 5 shows the results of the third phase of testing which shows that the local tax variable (PD) consistently obtained significant results during the 5 years of testing. This result is indicated by

p value below 1% significance with positive β coefficient.

The results of all testing stages show that the regional tax variable (PD) consistently has a significant positive effect on the GRDP variable per capita (PE). These results indicate that local tax revenue is one indicator that can be used to measure the economic growth of people in new autonomous regions. Based on the entire results of the study, the researcher decided that only hypothesis (H4) was accepted in this study.

Furthermore, researchers conducted a robustness test of results (robustness test) to strengthen the test results that have been

obtained. Robustness test is done with the same steps as the previous test. Researchers are trying to replace the GRDP variable per capita (PE) with the human development index (HDI). Researchers used the HDI data available in the Central Statistics Agency of the Republic of Indonesia (BPS). Human development index (HDI) represents the welfare of the community in the fields of health, education, and minimum living standards (Chansarn, 2014; Tadjoeddin, 2015). These three aspects reflect the economic capacity of the community in financing their health, education needs and achieving a decent standard of living. This is the reason researchers use the HDI as a substitute for GRDP per capita (PE) in the robustness test.

Table 6. Robustness Test Results in Stage 1^a

Variabel	N	B	Sig
C		10.989	0.000
JP	573	-1.068	0.908
AK	573	0.105	0.603
TP	573	0.111	0.035**
PD	573	0.076	0.000*
BS	573	0.018	0.472
F_Stat			0.000
R ₂		0.118	

Dependent Variable: HDI (Human Development Index)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: a: Testing of all new autonomous regions selected as samples

* Sig. 1%, ** Sig 5%, *** Sig. 10%

Table 6 is the result of the robustness test stage 1 which shows that there are two variables namely the level of education (TP) and local tax (PD) which have a significant positive effect on the human development index (HDI). TP variable obtained p value 0.035 below the significance of 5% with a positive β -coefficient. These results indicate that PD and TP have a significant positive

effect on HDI. While other variables did not obtain significant results.

The robustness test results stage 2 are set out in Table 7 which shows the local tax variable (PD) obtains a p value below the 5% significance with a positive β coefficient on each new autonomous regions formed in 2003-2008. This means that the PD obtains the significance of the results consistently in this test. Other variables show different results in each DOB

formed in 2003-2008. Thus, JP, AK, TP, and BS variables are not able to explain the human development index (HDI) variables

consistently in each criterion of new autonomous regions establishment year.

Table 7. Robustness Test Results in Stage II

Variable	New Autonomous Regions 2003 ^a			New Autonomous Regions 2007 ^b			New Autonomous Regions 2008 ^c		
	N	B	Sig	N	B	Sig	N	β	Sig
C		11.604	0.000		6.367	0.006		11.381	0.000
JP	380	-1.058	0.000*	108	-0.433	0.674	85	-1.221	0.047**
AK	380	0.102	0.120	108	-0.014	0.945	85	0.252	0.105
TP	380	0.109	0.080*	108	-0.040	0.848	85	0.106	0.377
PD	380	0.055	0.005*	108	0.137	0.027**	85	0.098	0.038**
BS	380	-0.036	0.248	108	0.230	0.000*	85	-0.030	0.639
F_Stat			0.000*			0.000*			0.006*
R ²		0.133			0.244			0.237	

Dependent Variable: HDI (Human Development Index)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: The period of observations a: 2009 - 2018, b : 2013-2018, and c: 2014 - 2018

* Sig. 1%, ** Sig 5%, *** Sig. 10%

Table 8. Robustness Test Results in Stage III^a

Variable	N	2014		2015		2016		2017		2018	
		β	Sig	β	Sig	B	Sig	β	Sig	β	Sig
C		15.231	.000	14.217	0.000	12.718	0.001	5.974	0.056	7.432	0.009
JP	73	-2.074	0.050**	-1.714	0.078**	-1.124	0.236	-0.074	0.924	-0.448	0.519
AK	73	0.367	0.102	0.136	0.565	-0.089	0.668	0.101	0.476	0.058	0.759
TP	73	0.353	0.131	0.198	0.221	0.335	0.104	-0.186	0.350	-0.036	0.799
PD	73	0.046	0.029**	0.059	0.042**	0.014	0.075***	0.094	0.003*	0.187	0.029**
BS	73	-0.025	0.734	0.017	0.810	-0.092	0.177	0.111	0.079***	0.035	0.594
F-Stat			0.003*		0.018*		0.005*		0.005*		0.007*
R ²		0.189		0.180		0.217		0.215		0.196	

Dependent Variable: HDI (Human Development Index)

Independent Variable: JP (Total Population), AK (Poverty Rate), TP (Education Level), PD (Local Tax), BS (Social Assistance)

Note: a: Testing all new autonomous regions per year with criteria ≥ 6 years

* Sig. $\leq 1\%$, ** Sig $\leq 5\%$, *** Sig. $\leq 10\%$

Table 8 is an illustration of the results of the robustness test in stage 3 which shows the local tax variable (PD) obtains the same significance of the results in each test in 2014 - 2018. These results are marked with p values below 5% significance with positive β coefficients. While the population (JP), poverty (AK), education (TP) and social assistance (BS) variables are unable to explain the human development index variable (HDI) consistently in each observation year (2014 - 2018).

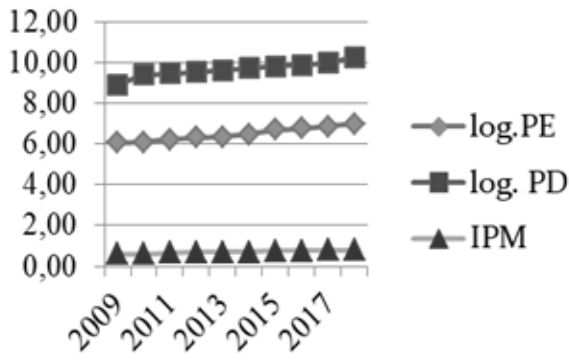
Overall robustness test results show results that are consistent with the results of previous tests, which means strengthening the test results in this study. In the discussion section, the researcher will use the local tax variable (PD) as an indicator of community economic growth in the new autonomous regions which will be compared to the GRDP per capita growth (PE) and the human development index (HDI).

Studies in various countries have proven that taxes are closely related to social-economic development. Studies in the State of Serbia show that local governments must have a much more active role in managing local tax policies to overcome the problem of very high unemployment, low levels of domestic product per capita, high debt and trade deficits (Aničić, J and Đurović, 2016). This study implies that local tax revenue is a determinant of the success of the community's social and economic development in an area. In addition, the case in Hungary also shows that local government transparency in tax collection can increase public compliance to pay taxes (Sipos, 2015). In Switzerland, a tax on local resources that benefits the whole community is preferred over providing opportunities for local residents to invest (Vuichard, Stauch and

Dällenbach, 2019). This means, an increase or decrease in local tax revenue is an economic consequence that is received by the region from the growth of social welfare in the area. In this study, the results of the analysis reveal that local tax is one indicator that is able to explain the economic conditions of people in the area. As such, these results support previous studies.

Comparisons of GRDP per capita (PE), human development index (HDI) and local tax revenue (PD) are presented in graph 1 and graph 2. Meanwhile, comparison of total population (JP), poverty rate (AK), education level (TP), and Government social assistance distribution (BS) are presented in Graph 2. The two graphs will form a pattern of movement that shows the growth consistency of each indicator.

Figure 2 is the result of researchers' observations of the average economic growth of the community in new autonomous regions, which is indicated by regional tax indicators (PD), GRDP per capita (PE) and human development index (HDI). All three indicators show a consistent pattern of growth movement since 2009. In this study, the researchers did not set the variable population (JP), poverty rate (AK), education level (TP), and distribution of social assistance (BS) as indicators of growth community economy in new autonomous regions. The test results show that the four variables do not consistently affect the GRDP variable per capita (PE). Likewise in the robustness test, the four variables do not consistently affect the HDI variable.

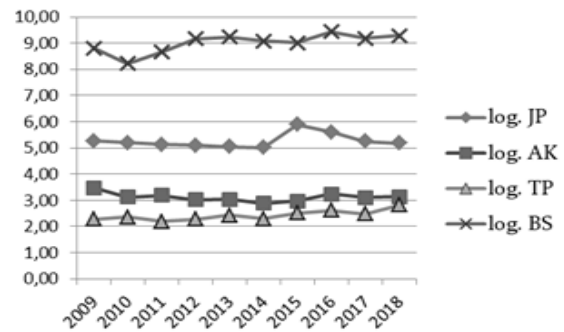


Source: Data processed by researchers (2019)
 Note: a: PE (Mean of GRDP per Capita), b: PD (Mean of local tax revenue), c: IPM (Mean of Human Development Index)

Figure 2. Growth of PE^a, PD^b, and HDI^c

Figure 3 shows that the population (JP), poverty rate (AK), education level (TP), and distribution of social assistance (BS) experienced fluctuations in movement from 2009 to 2018. This is the reason researchers did not use these four indicators to measure the community economy on new autonomous regions. Population migration is the cause of the patterns of movement of the four indicators that do not show consistent results. Previous studies have revealed that population migration in Indonesia has an impact on reducing social support, improving economic status and living standards, and migrants tend to send large amounts of income to families of origin (Lu, 2010; Skoufias and Olivieri, 2013). Meanwhile, Liu & Shen (2014) found an estimation model called "Binomial Gravity Models" which shows that employment opportunities, especially wage differences between regions, play a dominant role in attracting skilled labor which impacts on the population's decision to migrate. Java and Bali are regions in Indonesia that are believed to have various advances in regional development so that many residents of other regions migrate to the region (Tiwari, 2017). Referring to some

of the studies, the researcher believes that migration is a behavior of the Indonesian population to obtain economic prosperity so as to bias the problems of population, poverty, education level, and distribution of social assistance in new autonomous regions. Therefore, the four indicators cannot be used as benchmarks for the economic growth of society in new autonomous regions.



Source: Data processed by researchers (2019)
 Note : a: JP (Mean of total population), b: AK (Mean of poverty rates), c: TP (Mean of education level), d: BS (Mean of social assistance distribution)

Figure 3. Growth of JP^a, AK^a, TP^c dan BS^d

CONCLUSION

Test results have revealed that local tax revenue is an indicator of economic growth in the community in new autonomous regions. This result is proven by the pattern of movement of regional tax indicators which are relatively the same as the GRDP per capita indicator. While the robustness test results also reveal that local taxes consistently affect the human development index in new autonomous regions. In the discussion section, the researchers found that community economic growth represented by regional tax revenue continues to increase along with the increase in local tax revenue. In the end, the researchers concluded that the economy of the community in new autonomous regions has increased since 2009 marked by an increase in regional tax

revenues along with human development in the area.

This study has proven that regional tax revenue is an indicator of economic growth in the community in new autonomous regions. These results provide an overview for all academics and practitioners in the field of economics to utilize the findings of this study to develop the implementation of community economic measurements in the area and further research development. Researchers hope that future studies on the regional economy can use local tax indicators as a measure of the economic well-being of people in the region.

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APPENDICES

Table 9. Operational Variables

No	Variables	Variable Type	Abbreviation	Measurement
1	The Indonesian economic growth	Dependent	PE	Logarithm of GRDP value per capita in the new autonomous region which was established in 2003 - 2008.
2	Total population	Independent	HDI	Human development index in the new autonomous region which was established in 2003 - 2008.
3	Poverty rates	Independent	JP	Logarithm total population in the new autonomous region which was established in 2003 - 2008.
4	Education level	Independent	AK	Logarithms number of poor population in the new autonomous region which was established in 2003 - 2008.
5	Local tax revenue	Independent	TP	Logarithms number of residents educated S1 (Bachelor's) in the new autonomous region which was established in 2003 - 2008.
6	Social assistance distribution	Independent	PD	Logarithm the amount of local tax revenue in the new autonomous region which was established in 2003 - 2008.
			BS	Logarithms number of distributed local government social assistance in the new autonomous region which was established in 2003 - 2008.

Table 10. Test Results of All New Autonomous Regions Selected as Samples

Model 1	B	Std. Error	t	Sig.	Tolerance	VIF	Σ	Sig. Glejser Test
(Constant)	14.138	1.751	8.075	0.000				
JP	-1.914	0.438	-4.369	0.000	0.197	5.068		0.055
AK	0.109	0.115	0.950	0.343	0.336	2.976		0.560
TP	0.202	0.108	1.878	0.061	0.354	2.828		0.133
PD	0.161	0.038	4.232	0.000	0.980	1.020		0.812
BS	0.044	0.051	0.860	0.390	0.980	1.020		0.118
R-Square							0.184	
Run Test				0.368				
F- Stat				0.000				

Dependent Variable: PE

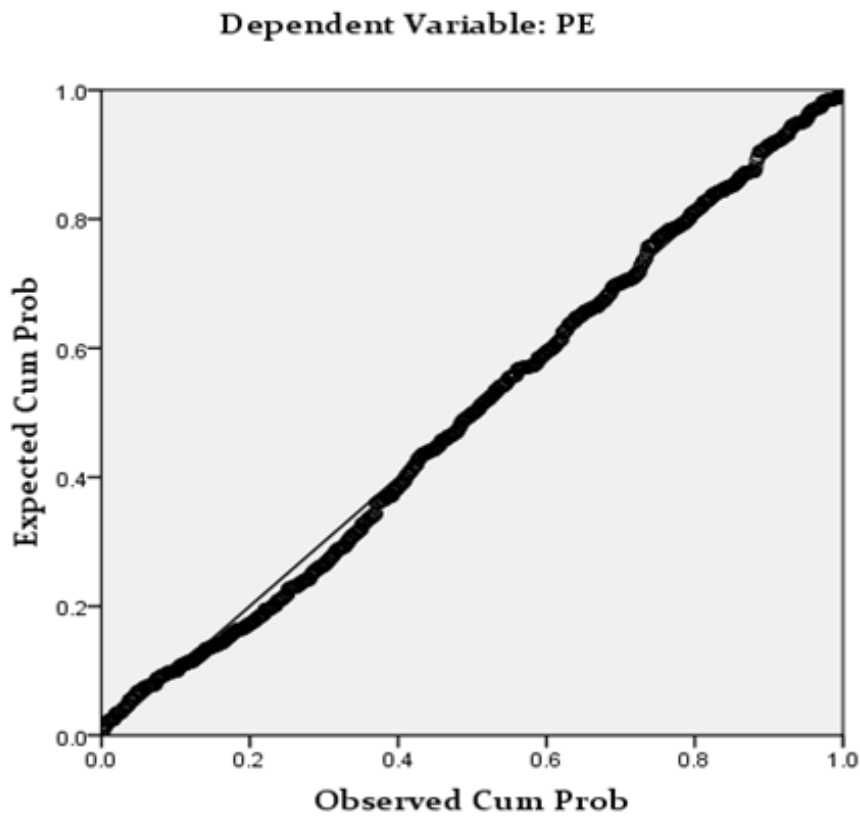
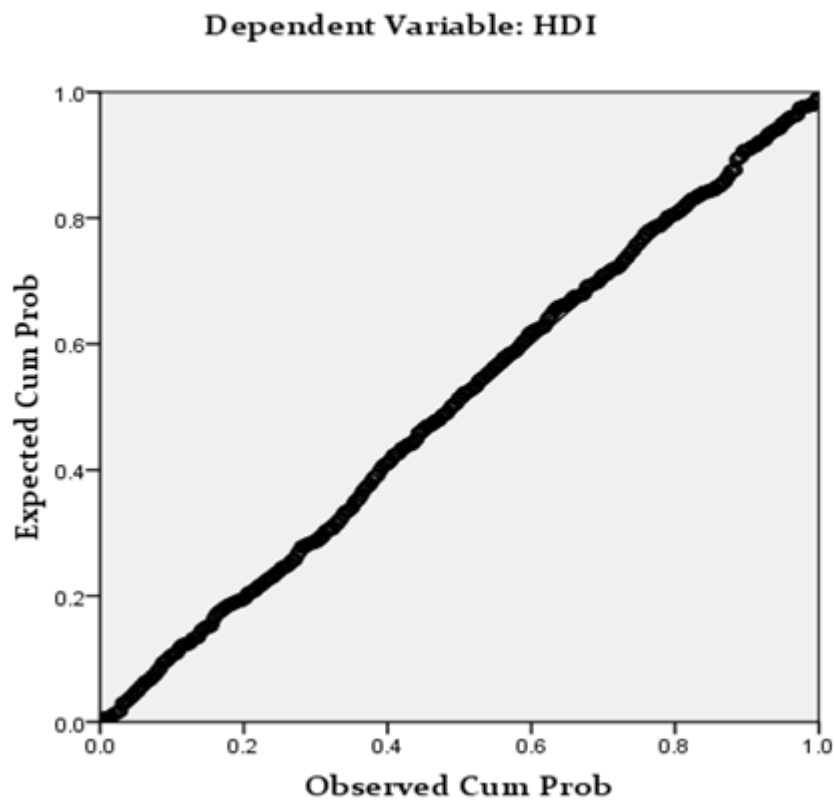


Figure 4. Normal P-Plot of Regression Standardized Residual (All New Autonomous Regions Selected)

Table 11. Robustness Test Results of All New Autonomous Regions Selected as Samples

Model 1	B	Std. Error	t	Sig.	Tolerance	VIF	Σ	Sig. Glejser Test
(Constant)	10.989	0.852	12.897	0.000				
JP	-1.068	0.213	-5.010	0.908	0.197	5.068		0.325
AK	0.105	0.056	1.882	0.603	0.336	2.976		0.897
TP	0.111	0.052	2.115	0.035	0.354	2.828		0.244
PD	0.076	0.018	4.135	0.000	0.980	1.020		0.966
BS	0.018	0.025	0.719	0.472	0.980	1.021		0.407
R-Square							0.118	
Run Test				0.953				
F- Stat				0.000				

Dependent Variable: HDI

**Figure 5.** Normal P-Plot of Regression Standardized Residual (Robustness Test)