Advances in Social Sciences Research Journal – Vol.7, No.1
Publication Date: Jan. 25, 2020
DoI:10.14738/assrj.71.7741.
Arifin, Z., Maipita, I., & Hutasuhut, S. (2020). The Effect Of Capital Expenditure And Economic Growth On The Human Development Index Of The District / City In North Sumatera. *Advances in Social Sciences Research Journal,* 7*(1)* 585-594.

The Effect Of Capital Expenditure And Economic Growth On The Human Development Index Of The District / City In North Sumatera

Zainal Arifin
Faculty of Economics,
Universitas Negeri Medan, Indonesia

Indra Maipita
Faculty of Economics,
Universitas Negeri Medan, Indonesia

Saidun Hutasuhut
Faculty of Economics,
Universitas Negeri Medan, Indonesia

ABSTRACT

This study aims to analyze the effect of capital expenditure and economic growth simultaneously on the Human Development Index (HDI) in districts/cities in North Sumatra. This type of research is a descriptive-quantitative approach that suppresses its analysis of numerical data that is processed by the statistical method. Sources of data in this study were taken from the Central Bureau of Statistics of North Sumatra for the HDI data. The sample in this study is all districts/cities in North Sumatra for the period 2013-2017. The data analysis technique used in this study uses panel data regression with Eviews 7 because, in this study, there are characteristics of cross-section and time-series data simultaneously. The results of this study indicate that capital expenditure partially has a positive and significant effect on the Human Development Index in districts/cities in North Sumatra. Economic growth partially has a positive and significant effect on the HDI in districts/cities in North Sumatra, and capital expenditure and economic growth have a positive and significant effect simultaneously on the Human Development Index in districts/cities in North Sumatra.

Keywords : capital expenditure, economic growth, human development index

INTRODUCTION

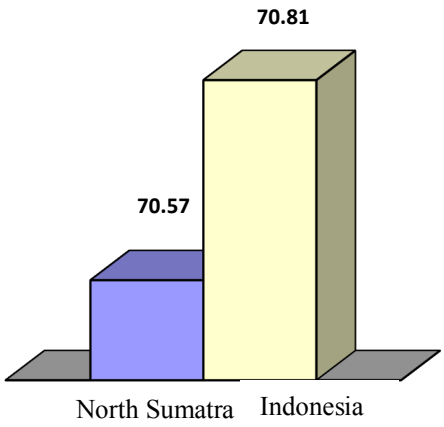
The primary purpose of development carried out by the government must lead to the welfare of society. In reality, development is often found to be oriented towards achieving the level of economic growth, not yet focused on improving the standard of living. Human capital, as an input of economic development, can explain the welfare of a country. Therefore, economies of scale and the formation of expertise and human quality are considered as important (Prihastuti, 2018). Human development is a concept that places humans as the ultimate goal of development, not tools of development. Human development has a comprehensive meaning. However, the basic idea of human development is quite simple, namely creating positive growth in the economic, social, political, cultural, environmental, and changes in human welfare (Khotimah, 2018). The United Nations Development Program (UNDP) states that human development is the formulation of efforts to expand choices for the population as well as the level to be achieved from the development itself (North Sumatra Central Bureau of Statistics, 2018).

Community welfare has a more complex dimension outside the economic aspect, which includes social aspects such as education level and public health level. Therefore, the Human Development Index (HDI) also includes components of human welfare in the social dimension, including purchasing power (income), education, and public health, so that the increase in achievement of the HDI is inseparable from the increase in each of its constituent components. (Sjafrizal, 2014). According to UNDP (2016) to see the achievements of the HDI between regions can be seen through the grouping of criteria into several categories, namely:

1. HDI < 60 : Low
2. 60 ≤ HDI < 70 : Moderate
3. 70 ≤ HDI < 80 : High
4. HDI ≥ 80 : Very high

The higher HDI obtained by an area, it can be interpreted the higher the level of community welfare in the region as measured through the components of the dimensions of purchasing power (income), education, and public health. Conversely, if HDI score obtained by an area is lower, the lower the level of community welfare in that region. North Sumatra is the fourth most populous province in Indonesia, with a population of 14,415,400 people spread across 33 Kapubaten / Kota, (Central Bureau of Statistics, 2018). Therefore, the development policy-oriented to human development is a vital thing that needs to be realized continuously and is expected to be able to improve the welfare of its people. It makes the HDI indicator becomes vital in the development policy of North Sumatra Province. The average score of the North Sumatra HDI compared to the average score of Indonesia (national) can be seen in the following figure:

Figure 1. Comparison of Average North Sumatra and Indonesian Human Development Index 2013 - 2017



Based on Figure 1, it can be seen that the average HDI score of North Sumatra is still below the average HDI score of Indonesia (70.57 <70.81).

Government policies that support aspects of human development can be seen from the proportion of the government budget for development, and the realization of the budget (Arsyad, 2010). One manifestation of the intended budget allocation is capital expenditure. Capital expenditure is the expenditure of the local government in adding assets or wealth of the region with various kinds of infrastructure in order to improve the physical and non-physical quality of the community as well as the level of community welfare in terms of

education, health and the need for adequate housing availability (Halim, 2002). Besides, increasing economic growth is expected to be able to improve the welfare of the community. Household activities contribute significantly to improving human development indicators through household spending on food, clean water, health care, and schooling (Ramirez et al., 1998). The higher economic growth, the higher the growth of output per capita, so that it can change consumption patterns. In this case, the level of people's purchasing power will also be higher. The high purchasing power of this community will positively affect the HDI significantly (Mirza, 2014). The indicators used to calculate the rate of economic growth are the growth rate of national products, such as Gross Domestic Product (GDP) for the national level and Gross Regional Domestic Product (GRDP) for provincial and district / city-regions (Susanti, 2000).

LITERATURE REVIEW

Human Development Index

The process that focuses on creating a supportive environment to develop potential, productive, and creative needs to pay attention to the concepts and basic dimensions of human development. The most basic dimension concepts are healthy living, having access to knowledge, and a decent standard of living. Without this basic dimension, other dimensions such as political freedom, the ability to participate in community, self-esteem, and others cannot be achieved. Human development is a long-term goal of a society and puts development around humans, not humans around development (Nurmainah, 2013).

UNDP (2016) provides criteria that the rationale for the concept of human development includes these following aspects:

1. Development must prioritize the population as the center of attention and be the end of the development target.
2. Development is intended to increase choices for the population, not just to increase their income. Therefore, the concept of human development must be centered on population comprehensively and not merely on economic aspects.
3. Human development pays attention not only to efforts to improve human capabilities/capacities, but also to efforts to utilize those capabilities/capacities optimally.
4. Human development is supported by four main pillars, namely: productivity, equity, sustainability, and empowerment.
5. Human development becomes the basis in determining development goals in a country and in analyzing options for achieving them.

Human development simultaneously looks at all issues in society, namely economic growth, trade, employment, political freedom, or cultural values, from a human perspective. Thus, human development does not only pay attention to the social sector but is a comprehensive approach from all sectors (Yuliani and Saragih, 2014).

HDI measures the achievements of human development based on several basic components of quality of life. As a measure of the quality of life, HDI is built through a basic three-dimensional approach. These dimensions include long and healthy life, knowledge, and a decent life. These three dimensions have a comprehensive understanding because they are related to many factors. Life expectancy is used to measure the dimensions of health. To measure the dimensions of knowledge, a combination of literacy rate indicators, and the average length of school is used. As for measuring the dimensions of life, it is appropriate to use the Purchasing Power Parity indicator (BPS, 2017). The Ministry of National Development Planning (2014) suggested that HDI is one of the indicators of development performance to measure the basic dimensions of human development that reflect the status of the basic ability of the population,

namely Life Expectancy, Average Length of School Number, and real per capita expenditure to measure access to resources needed to achieve a decent standard of living. HDI is also used to classify whether a country is a developed country, a developing country or an underdeveloped country and also to measure the effect of economic policies on quality of life.

According to Central Bureau of Statistic (2017), the preparation for each component of HDI can be done in several stages, i.e.:

1. The first step in calculating HDI is to calculate the index of each HDI component (health, knowledge, and a decent standard of living) with the mathematical relationship as follows :
   $Index\ X_i = X_i - X_{i\,min}/[X_{i\,maks} - X_{i\,min}]$ (1)
   Note : X_i = component indicator HDI to i (i=123) ; Xmaks = maximum value of X_i ; Xmin = minimum value of X_1.
2. The second stage of calculating the HDI is calculating the simple average of each Xi index with a mathematical relationship.
   $HDI = \frac{1}{3}[X_1 + X_2 + X_3]$ (2)
   Note : X_1 = Life expectancy index; X_2 = 2/3 (Literacy index) + 1/3 (Average length of school index); X_3 = Adjusted per capita consumption index.

Government Expenditure Theory

Theory of Rostow and Musgrave

This model was introduced and developed by Rostow and Musgrave, which links the development of government spending with the stages of economic development that are distinguished between the initial, intermediate, and advanced stages. In the initial stages of economic development, the ratio of government expenditure to national income is relatively large. This is because, at this stage, the percentage of government investment to total investment is still large, so the government must provide various facilities and infrastructure such as education, health, and transportation infrastructure (Mangkoesoebroto, 2001). In the intermediate stage of economic development, government investment is still needed to spur growth in order to take off. However, at this stage, the role of private investment has been increasingly enlarged. The role of government remains large at the intermediate stage because the growing role of the private sector causes many market failures and also causes the government to provide public goods and services in higher quantities and better quality.

Rostow argues that development has shifted government activities from providing economic infrastructure to spending on social services such as old-age welfare programs, education programs, and public health service programs. Meanwhile, in one development process, according to Musgrave, the ratio of private investment to GNP was even higher. But the ratio of government investment to GNP will be smaller.

Theory of Adolf Wagner

Adolf Wagner stated that government spending and government activities continue to increase. This tendency by Wagner is called by law always increasing the role of government. The core theory is the increasing role of government in the activities and economic life of society as a whole. Wagner said that in an economy, if per capita income rises, government spending will also increase, mainly because the government must regulate relations that arise in society, law, education, recreation, and culture. In connection with Wagner's law, it can be seen that some of the reasons for the increase in government spending are increased security and order functions, increased welfare functions, improved banking functions, and improved development functions..

Capital Expenditure

Regional expenditure is classified into direct and indirect expenditure. Direct expenditure consists of employee expenditure, goods and services expenditure, and capital expenditure. Capital expenditure has specific characteristics that indicate various considerations in its allocation. Obtaining fixed assets also has consequences for future operational and maintenance expenses (Bati, 2009). The existence of a capital expenditure budget sourced from central assistance and local original income, which when compared with private investment has a relatively small value, but the capital expenditure has a strategic role because the target of its use is to finance development in the field of facilities and infrastructures that can support the smooth running of private businesses and fulfillment of community services.

Expenditure on regional governments is divided into indirect expenditure groups and direct expenditure groups, as explained in article 36 paragraph 1,2,3 in the regulation of the Ministry of Home Affairs Number 13 of 2006. Mudjisantosa (2012) states, an expenditure is categorized as capital expenditure if:

1. Expenditures result in the acquisition of fixed assets or other assets that increase the life span, benefits, and capacity.
2. The expenditure exceeds the minimum capitalization limit of fixed assets or other assets that have been determined by the government.
3. The acquisition of fixed assets is not intended to be sold or distributed.

According to Government Regulation Number 71 of 2010, capital expenditure is Regional Government expenditure whose benefits exceed one fiscal year. It will add assets or regional wealth and subsequently will add to routine expenditures such as maintenance costs in the general administration expenditure group. Capital expenditure is used to obtain local government fixed assets such as equipment, infrastructure, and other fixed assets. How to get capital expenditure by buying through an auction or tender process. Fixed assets owned by local governments as a result of capital expenditure are the main requirements in providing public services. To add fixed assets, the regional government allocates funds in the form of capital expenditure budget in the APBD. Every year, the local government procures fixed assets following budget priorities and public services that have a long-term financial impact (Ardhani, 2011).

Economic Growth

Economic growth is a process of increasing productive capacity in an economy on an ongoing basis over time to produce an increasingly large level of output income and to find out must compare with the level of national income from year to year. To spur economic growth, an investment that is needed is a net addition to capital reserves or capital shock.

Harrod-Domar clearly states that the rate of economic growth can be determined jointly by the savings ratio and the output capital ratio. Besides, this analysis can also explain the relationship between economic growth and regional disparities and why this can occur (Syafrizal, 2007). Economic growth is also defined as economic activity in a country or region accompanied by a change from constant to dynamic conditions supported by an increase in the number of labor force and production infrastructure, the ability to absorb labor and the calculation of the increase in industrial capacity and infrastructure shown by decreasing dependence on traditional economic activity (Husain at-Tariqi, 2004).

Classical Economic Theory

This theory is taken from Adam Smith's explanation so that people are given the broadest possible freedom in determining what economic activities they feel are the best to do.

According to Adam Smith, a free market economic system will create efficiency and can bring the economy to full employment conditions and can guarantee economic growth until a stationary position is reached. While the government's role is only as a guarantor of security and order and to provide legal certainty and justice for economic actors. This means that the government has no role in the economy. John Maynard Keynes corrected Smith's view by saying that to ensure stable economic growth there was a need for government intervention, but not in the production process but instead played a role in stimulating aggregate demand, namely through the application of fiscal policy (taxation and government spending), monetary policy (interest rates interest and money supply), and direct supervision.

Harrod-Domar Theory

The Harrod-Domar growth model explains economic mechanisms that rely on increased investment in accelerating economic growth. This model suggests that each economy basically must always reserve or save a particular portion of its national income to add or replace capital goods (buildings, equipment, and raw materials) that have been shrunk or damaged. However, to spur economic growth new investment is needed which is a net addition to reserves or capital stock.

Economic development cannot be separated from economic growth. Economic development encourages economic growth, and vice versa, economic growth accelerates the process of economic development. The difference between the two is that economic growth has a more quantitative success, namely an increase in the standard of income and the level of output produced, while economic development is more qualitative, not only increases in production, but also changes in the production structure and allocation of inputs to various economic sectors such as in institutions, knowledge, social and engineering.

METHODOLOGY

This type of research is a descriptive-quantitative approach that suppresses its analysis of numerical data that are processed by the statistical method. Basically, a quantitative approach is carried out in inferential research (in terms of testing hypotheses) and resting conclusions on a probability of rejecting a null hypothesis. Quantitative methods will obtain the significance of group differences or the significance of the relationship between the variables studied. This research was conducted on District / City Governments in North Sumatra, amounting to 33 City Regencies. The data collection method used was documentation, which is a way of collecting data used to collect secondary data from reports on the Human Development Index, capital expenditure, and growth. The economy in the city district in North Sumatra in 2013-2017. The data analysis technique used in this study uses panel data regression with Eviews 7 because in this study there are characteristics of cross-section and time-series data simultaneously.

Panel data is a combination of cross-section data and time-series data (Widarjono, 2013). Regression with panel data is required to choose some of the most appropriate approach models for estimating panel data, namely the Common Effect, Fixed Effect, and Random Effect approaches. The approach to the common effect model is the most straightforward approach to estimating panel data. Approach to the common effect model has the disadvantage of the model incompatible with the real situation because of the assumption that the behavior between individuals and the same period when in reality, the condition of each object will be different from each other at one time with another time. The fixed-effect model approach assumes differences between objects, although using the same regression coefficient. The fixed effect here means that an object has a constant that is of constant magnitude for various periods, as well as its regression coefficient. The random effect model approach is to overcome

the weaknesses of the fixed-effect model. This model is also known as the generalized least square (GLS) model. The random effect model uses residuals that are thought to have relationships between time and between objects. To use this model, there is one condition that must be met, namely, the cross-data object is higher than the number of coefficients. The regression equation in this study is:

$$Y_{it} = a + b_1 X_{1it} + b_2 X_{2it} + \mu_{it} \quad (3)$$

Note: Y_{it} = Human Development Index; a = constant; b = regression coefficient; $X_{1\,it}$ = Capital Expenditures for entity i in year t; $X_{2\,it}$ = Economic Growth for entity i in year t; μ_{it} = Standard Error.

RESULT

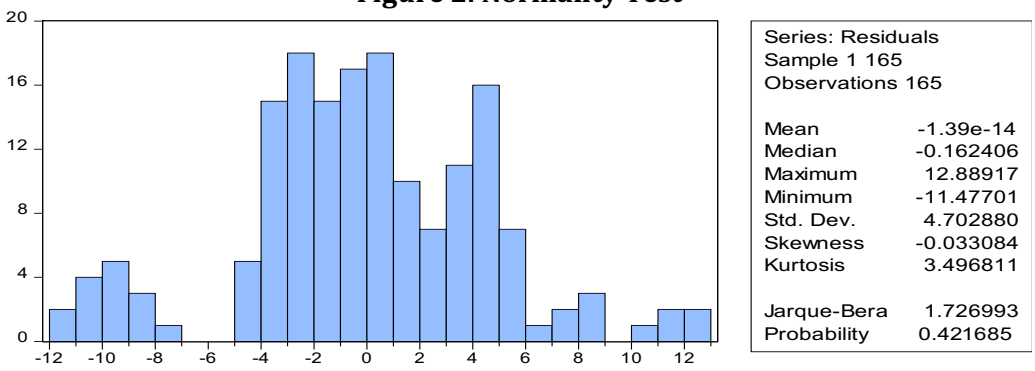
Analysis of Research Results

Classical Assumption Test

Classic assumptions testing used in this study include normality test, multicollinearity test, heteroscedasticity test.

Normality Test

Figure 2. Normality Test



Based on figure 2, the results obtained in the form of a jarque-fallow probability value of 1.726993. The jarque probability value is higher than the significant level (0.421685> 0.05) meaning that the residual has a normal distribution.

Multicollinearity Test

The next step of the classical assumption test is the multicollinearity test. Multicollinearity means that there is a perfect or specific linear relationship between some or all variables that explain the regression model.

Table 1. Multicollinearity Test

	Y	X1	X2
Y	1.000000	0.296697	0.065195
X1	0.296697	1.000000	-0.099800
X2	0.065195	-0.099800	1.000000

Based on table 1, the results obtained in the form of correlation values of each independent variable <0.80, which means there is no multicollinearity problem so that this research can proceed to the next stage.

Heteroscedasticity Test

The heteroscedasticity test is a key assumption in the classical regression model (OLS) that the variance of each error term is the same for all values of the independent variables.

Table 2. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.607596	Prob. F(2,162)	0.2035
Obs*R-squared	3.211005	Prob. Chi-Square(2)	0.2008
Scaled explained SS	3.864192	Prob. Chi-Square(2)	0.1448

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	319.9865	167.6630	1.908510	0.0581
X1	-10.74961	6.250191	-1.719884	0.0874
X2	-3.227980	4.773341	-0.676252	0.4998

R-squared	0.019461	Mean dependent var	21.98304
Adjusted R-squared	0.007355	S.D. dependent var	34.84179
S.E. of regression	34.71342	Akaike info criterion	9.950144
Sum squared resid	195213.5	Schwarz criterion	10.00662
Log likelihood	-817.8869	Hannan-Quinn criter.	9.973068
F-statistic	1.607596	Durbin-Watson stat	0.384787
Prob(F-statistic)	0.203548		

Based on Table 2, the results obtained in the form of probability value Obs * R-Square of 0.2008. Obs * R-Square probability probability is greater than the significance level (0.2008> 0.005), meaning that there is no heteroscedasticity in this study.

Analysis of Panel Data Regression

Based on the Chow test and the Hausman test, the chosen regression model is the fixed effect model. Therefore, the results of regression conducted through the fixed effect model can be seen in Table 3:

Table 3. Analysis of Panel Data Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	1.282961	0.312080	4.111001	0.0001
X2	14.00240	1.708149	8.197414	0.0000
C	-41.25947	9.212455	-4.478662	0.0000
Fixed Effects (Cross)				
_NIAS--C	28.46964			
_MANDAILINGNATAL--C	9.768614			
_TAPANULISELATAN--C	9.558567			
_TAPANULITENGAH--C	6.441812			
_TAPANULIUTARA--C	9.202353			
_TOBASAMOSIR--C	0.812800			
_LABUHANBATU--C	7.256310			
_ASAHAN--C	4.226007			
_SIMALUNGUN--C	7.244833			
_DAIRI--C	5.097901			
_KARO--C	8.078702			
_DELISERDANG--C	6.965959			
_LANGKAT--C	2.577895			
_NIASSELATAN--C	-6.766952			
_HUMBANGHASUNDUTAN--C	0.287419			
_PAKPAKBHARAT--C	-0.548888			
_SAMOSIR--C	1.270172			
_SERDANGBEDAGAI--C	0.279804			
_BATUBARA--C	-2.573639			
_PADANGLAWASUTARA--C	-2.279387			
_PADANGLAWAS--C	-4.498241			
_LABUHANBATUSELATAN--C	-3.093944			
_LABUHANBATUUTARA--C	-3.350346			
_NIASUTARA--C	-13.94975			
_NIASBARAT--C	-16.45396			
_SIBOLGA--C	-3.189360			
_TANJUNGBALAI--C	-8.446119			
_PEMATANGSIANTAR--C	0.061584			
_TEBINGTINGGI--C	-4.277770			
_MEDAN--C	-1.306427			
_BINJAI--C	-6.457357			
_PADANGSIDIMPUAN--C	-8.881496			
_GUNUNGSITOLI--C	-21.52673			

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.986230	Mean dependent var	68.64600
Adjusted R-squared	0.982628	S.D. dependent var	4.949324
S.E. of regression	0.652327	Akaike info criterion	2.169290
Sum squared resid	55.31896	Schwarz criterion	2.828127
Log likelihood	-143.9664	Hannan-Quinn criter.	2.436734
F-statistic	273.8446	Durbin-Watson stat	0.979970
Prob(F-statistic)	0.000000		

Table 3 shows the intercept values of each region where the constant value is -41,25947. If the value of the independent variable changes by 1 unit, it will also be followed by a change in the value of the intercept for each region.

The results of simultaneous testing conducted obtained prob value of 0.00000 (prob <0.05), which means that capital expenditure and economic growth have a significant effect on HDI. Therefore, the third hypothesis in this study is accepted, namely capital expenditure and economic growth simultaneously have a positive and significant effect on HDI of districts/cities in North Sumatra. This research implies that the District / City Government in North Sumatra needs to establish policies that can increase the allocation of capital expenditure as well as economic growth in the region which in the end will be able to increase the HDI in the area.

CONCLUSIONS

Based on the results of research and hypothesis testing that has been done, it can be concluded that capital expenditure has a positive and significant effect on the Human Development Index in the District / City in North Sumatra. Economic growth has a positive and significant effect on the Human Development Index in Districts / Cities in North Sumatra. Capital expenditure and economic growth have a positive and significant effect simultaneously on the Human Development Index in Districts / Cities in North Sumatra.

References

Ardhani, Pungky. 2011. Pengaruh Pertumbuhan Ekonomi, Pendapatan Asli Daerah, Dana Alokasi Umum, dan Dana Alokasi Khusus terhadap Pengalokasian Anggaran Belanja Modal (Studi pada Pemerintah Kabupaten / Kota di Jawa Tengah). Universitas Diponegoro. Semarang.

Arsyad, Lincolin. 2010. Ekonomi Pembangunan. Yogyakarta: BPFE

Badan Pusat Statistik. 2017. Indeks Pembangunan Manusia Tahun 2017. http://www.bps.go.id

Badan Pusat Statistik Sumatera Utara. Indeks Pembangunan Manusia. http://sumut.bps.go.id diakses tanggal 3 Desember 2018.

Bati, 2009. Pengaruh Belanja Modal dan Pendapatan Asli Daerah (PAD) terhadap Pertumbuhan Ekonomi (Studi pada Kabupaten dan Kota di Sumatera Utara. Jurnal Ekonom Vol: 4 No.2.

Halim, Abdul. 2002. Akuntansi Sektor Publik: Akuntansi Keuangan Daerah. Jakarta: Salemba Empat.

Khotimah, Khusnul. 2018. Analisis Pengaruh Pertumbuhan Ekonomi, Tingkat Pengangguran, Kemiskinan, Ketimpangan Distrubusi Pendapatan, dan Belanja Modal terhadap Indeks Pembangunan Manusia di Jawa Tengah. Yoyakarta: Jurnal Ekonomi UIN Sunan Kalijaga

Mangkoesoebroto, Guritno. 2001. Ekonomi Pubilk. Edisi 3. Yogyakarta: FE UGM.

Mirza, Denni Sulistio. 2011. Pengaruh Kemiskinan,Pertumbuhan Ekonomi dan Belanja Modal terhadap Indeks Pembangunan Manusia di Jawa Tengah. Jurnal Jejak Vol. 4 No. 2.

Mudjisantosa, 2012. Keuntungan adanya e-katalog dan e-Purchasing Pengadaan Barang dan Jasa Pemerintah.

Nurmainah, Santi. 2013. Pengaruh Belanja Modal Pemerintah Daerah, Tenaga Kerja Terserap dan Indeks Pembangunan Manusia terhadap Ekonomi dan Kemiskinan. Jurnal Bisnis dan Ekonomi Vol. 20 No. 2.

Prihastuti, Asepma Hygi. 2018. Pengaruh Alokasi Belanja Modal dan Pertumbuhan Ekonomi terhadap Indeks Pembangunan Manusia di Kabupaten/Kota Riau. Jurnal Menara Ekonomi Vol. IV No. 2.

Ramirez, A., G. Ranis, and F. Stewart. 1998. Economic Growth and Human Capital. QEH Working.

Susanti, H., Moh.Iksan dan Widyanti. 2000. Indikator-indikator Makro Ekonomi Edisi Kedua. Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.

Sjafrizal. 2014. Perencanaan Pembangunana Daerah Dalam Era Otonomi.Depok: PT Rajagrafindo.

UNDP. 2016. Human Development Report 2016: Human Development For Everyone. USA: UNDP

Widarjono, Agus. 2013. Ekonometrika Pengantar dan Aplikasinya. Yogyakarta: UPP STIM YKPN

Yuliani, Tutik dan Novita Saragih. 2014. Determinan Pembangunan Manusia di Kabupaten/Kota Provinsi Jawa Tengah. Jurnal Jejak Vol: 7 No. 1.