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ANALYSIS OF REGIONAL INEQUALITY IN THE PROVINCE OF MALUKU

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ABSTRACT

This study aims to determine the extent of regional inequality in Maluku Province, and to determine the factors that influence regional inequality such as population, education, health, regional labor. The analysis method used to see regional inequality is the Williamson Index. Meanwhile, Panel Data Regression is used to analyze the factors that influence inequality.

Based on the results of the Williamson Index calculation, the inequality of Maluku Province is in the medium category at 0.45, the highest regional inequality is Aru Regency and Buru Regency. Furthermore, the results of Panel Regression with the fixed effect data model show that Population, Education, Health, Labor variables simultaneously affect regional inequality, while partially Population and Education have a positive effect at a significance level of α = 5% (95% confidence level). The coefficient of determination (R2) of 98% indicates that the specification of the regression model used is appropriate and has goodness of fit.

Policy recommendations for overcoming inequality should prioritize human development, furthermore, to reduce regional inequality in Maluku Province, development is carried out in the areas of highest inequality, namely Aru Regency and Buru Regency.

Keywords: *Inequality, Regional, Williamson Index, Maluku Province*

INTRODUCTION

Regional disparities are inequalities that occur not only in the distribution of people's income, but also in the development between regions within a country (Sirojuzilam, 2008). According to Adisasmita (2005), regions that are underdeveloped or underdeveloped have a strong dependency on other regions. Some regions achieve rapid growth, while others experience slow growth. These regions do not experience the same progress due to their lack of resources.

This is in line with Kuznet's hypothesis of an inverted U-curve, where in the early stages of growth the income distribution tends to worsen, but in the later stages it will improve. Maluku Province's economic growth data tends to fluctuate, from 2012 to 2016. It can be seen that the upward trend in the rate of economic growth was positive in 2012 by 6.34% and in 2013 by 7.16%, while there was a significant decline from 2013 to 2014 to 5.34% and there was an upward trend in 2014 by 6.54% and decreased in 2015 by 5.61%, whereas the trend of GDP development in Maluku province increased from year to year with the highest in 2016 amounting to 24,889,951.50 million rupiah and the lowest in 2012 was 19,597,390.14 million rupiah. With the condition of GRDP per capita also from 2012 to 2016 experiencing a positive trend, namely in 2012 by 13.60%, in 2013 by 15.42%, in 2014 by 17.09% and in 2015 by 19.09% while in 2016 by 20.48%.

This indicates that there are differences in regional potential in each Regency/City so that the trend of economic growth fluctuates. The downward trend in economic growth in several districts / cities in Maluku Province can be seen in table 1. as follows:

Table 1. District/City Economic Growth Rate in Maluku Province in 2012-2016

No	Uraian	2012	2013	2014	2015	2016
(1)	(2)	(4)	(5)	(6)	(7)	(8)
1	West Southeast Maluku Regency	7.16	7.30	5.15	5.95	5.20
2	Southeast Maluku Regency	5.98	7.07	5.78	6.18	5.54
3	Central Maluku Regency	5.40	6.91	4.72	6.27	5.41
4	Buru Regency	5.44	5.44	4.42	6.23	5.14
5	Kep. Aru Regency	5.25	7.84	6.14	6.75	4.69
6	West Seram Regency	5.87	6.39	4.55	6.00	6.11
7	East Seram Regency	8.54	3.94	3.27	8.23	5.82
8	Southwest Maluku Regency	5.65	7.43	6.33	14.06	1.19
9	South Buru Regency	4.63	5.20	5.37	6.25	6.79
10	Ambon City	7.14	8.33	6.02	5.93	6.30
11	Tual City	5.90	7.90	6.06	6.21	5.68
JUMLAH		**6.34**	**7.16**	**5.34**	**6.54**	**5.61**

Source; BPS, Maluku In Figures 2017

The data in Table 1 shows that the regency that experienced a positive economic growth trend was South Buru Regency, this occurred from 2012 to 2016, namely in 2012 it was 4.63% and in 2013 it was 5.20%, in 2014 it was 5.37% and in 2015 it was 6.25%, while in 2016 there was an increase of 6.79%. Maluku Province is known as an archipelago province or a thousand islands (the Spices Island) experiencing inequality in accelerating development between regions. According to Tarigan (2004), Gross Regional Domestic Revenue (GRDP) per capita is one indicator to determine the level of community welfare in a region. GRDP per capita is also used to catch up with economic growth compared to other regions. Per capita income in the Regency / City in Maluku Province can be seen in table 2.

Table 2. District/City GRDP Per Capita Data (Million Rupiah) 2012-2016

No	Uraian	2012	2013	2014	2015	2016
(1)	(2)	(4)	(5)	(6)	(7)	(8)
1	West Southeast Maluku Regency	9.84	10.46	10.91	11.46	11.97
2	Southeast Maluku Regency	12.71	13.53	14.28	15.10	15.90
3	Central Maluku Regency	10.20	10.87	11.35	12.03	12.64
4	Buru Regency	8.93	9.11	9.22	9.49	9.68
5	Kep. Aru Regency	16.50	17.51	18.30	19.27	19.89
6	West Seram Regency	7.58	8.02	8.35	8.81	9.31
7	East Seram Regency	14.12	14.42	14.65	15.59	16.24
8	Southwest Maluku Regency	9.03	9.63	10.22	11.60	11.70
9	South Buru Regency	10.18	10.52	10.87	11.35	11.90
10	Ambon City	18.17	18.86	19.16	19.49	19.90
11	Tual City	15.45	16.19	16.65	17.19	17.66
JUMLAH		**12.48**	**13.13**	**13.58**	**14.22**	**14.76**

Source; BPS, Maluku In Figures 2017

Apart from the level of GRDP per capita, another indication of the existence of development inequality between regions in Maluku Province is the distribution of population. As can be seen in table 3. the first largest population distribution in Maluku Province was occupied by Ambon City in 2016 at 411,617 people, Central Maluku Regency had the second highest population with 369,315 people from the total population of Maluku Province and in 2016 West Seram Regency had the third largest population by contributing 169,481 of the total population in Maluku Province can be seen in table 3.

Table 3. Population of Regency/City in Maluku Province Year 2012-2016

No	Uraian	2012	2013	2014	2015	2016
(1)	(2)	(4)	(5)	(6)	(7)	(8)
1	West Southeast Maluku Regency	106.768	107.827	108.665	109.589	110.425
2	Southeast Maluku Regency	97.302	97.823	98.073	98.474	98.684
3	Central Maluku Regency	364,911	366.006	367.177	368.290	369.315
4	Buru Regency	112.789	116.471	120.181	124.022	127.908
5	Kep. Aru Regency	86.018	87.423	88.739	89.995	91.277
6	West Seram Regency	166.389	167.279	168.134	168.829	169.481
7	East Seram Regency	101.436	103.196	104.902	106.698	108.406
8	Southwest Maluku Regency	71.060	71.531	71.707	72.010	72.284
9	South Buru Regency	55.087	56.075	57.188	58.197	59.289
10	Ambon City	348.608	363.771	379.615	395.423	411.617
11	Tual City	60.289	62.103	64.032	65.882	67.783
JUMLAH		**1.570.657**	**1.599.505**	**1.628.413**	**1.657.409**	**1.686.469**

Source; BPS, Maluku In Figures 2017

With the differences in regional conditions or indications of inequality, it can hamper the economic development process of Maluku Province in particular, therefore research on Regional Inequality Analysis and Countermeasure Policies in Maluku Province is very necessary.

Problem Formulation
Based on the background of the research, the main problems of development inequality in Maluku Province are:
1. How big is the regional inequality of districts/cities in Maluku Province?
2. What factors influence regional inequality in Maluku Province?

LITERATURE REVIEW

2.1. Development, Economic Growth and Regional Inequality.

In general, development is always accompanied by growth, but growth is not necessarily accompanied by development. According to Bhattacharya in Ivanovich (2014), the relationship between economic growth and regional inequality has not been agreed upon especially at the global level as both show a negative relationship. In particular, underdevelopment of economic growth affects per capita income, poor health, education and labor (Jhingan, 2010).

Thus, economic development is not solely measured based on the overall increase in GNP, but must pay attention to the distribution of income throughout the population, as well as who has enjoyed the results (Todaro and Smith, 2011).

2.2. Regional Economic Development Theory.

Regional economic development is the process of local governments and communities being able to manage existing resources and being able to encourage the development of economic activities in a particular region (Arsyad, 2002). According to Wibisono (2005), regional development is very important because the reason for regional income disparity comes from the uneven distribution of natural resource income, on the other hand how the relationship between regions can be done well.

2.3. Concept of Interregional Economic Inequality.

Thee Kian Wie, (1981) states that income distribution inequality from an economic point of view is divided into: 1. Inequality in income distribution among income recipients (size distribution oncome); 2. Inequality in income distribution between urban and rural areas (urban-rural income disparities); 3. Inequality in income distribution between regions (regional income disparities);

Differences in resources and the start of development between regions. The analysis linking stages of economic development and income distribution as well as the expression growth versus equity was actually triggered by a discovery started by Simon Kuznet (1966). Where Simon Kuznet connects the growth rates of various developed and developing countries by observing time series data and cross section data covering several countries. In the observation, Kuznet found an inverted U-shaped pattern. The pattern implies that in the early stages of development, the growth process is followed by a worsening of income distribution and after reaching a certain point, development will be followed by improved equity. Development with results as described by the inverted U hypothesis, the following is a table of regional groupings based on Klassen Typology

Table 4. Regional Economic Grouping Based on Regional Typology

Growth / Rate	Above-average growth rate.	Below-average growth rate
Above average per capita income	Advanced Region	Developed but Depressed Region
Below average per capita income	Developing Region	Disadvantaged Areas

The inequality between fast-growing and relatively underdeveloped regions is evidenced by the fact that East Asia with low inequality has grown rapidly, while Latin America and Africa with high inequality have grown very slowly (Todaro and Smith, 2011).

Inequality in economic growth between regions is caused by a variety of influencing factors. As stated in (Sjafrizal 2008), the causes of economic inequality between regions include:

1. Differences in the content of natural resources.
2. Differences in demographic conditions
3. Lack of smooth mobility of goods and services
4. Concentration of regional economic activities

Forms of inequality basically take place and manifest in various forms, aspects or dimensions. In addition, inequality can be divided into vertical inequality and horizontal inequality as well as economic inequality and social inequality.

2.4. Measures of Development Inequality

To measure disparity or inequality, it is necessary to distinguish between measuring inequality in income distribution and measuring inequality in economic development between regions.

2.4.1. Gini Ratio

The measurement criteria are as follows:

a. Low level of inequality, if the Gini coefficient is <0.35
b. Moderate inequality, if the Gini coefficient is between 0.35-0.5
c. High level of inequality, if the Gini coefficient is > 0.5, (Asra, 2000).

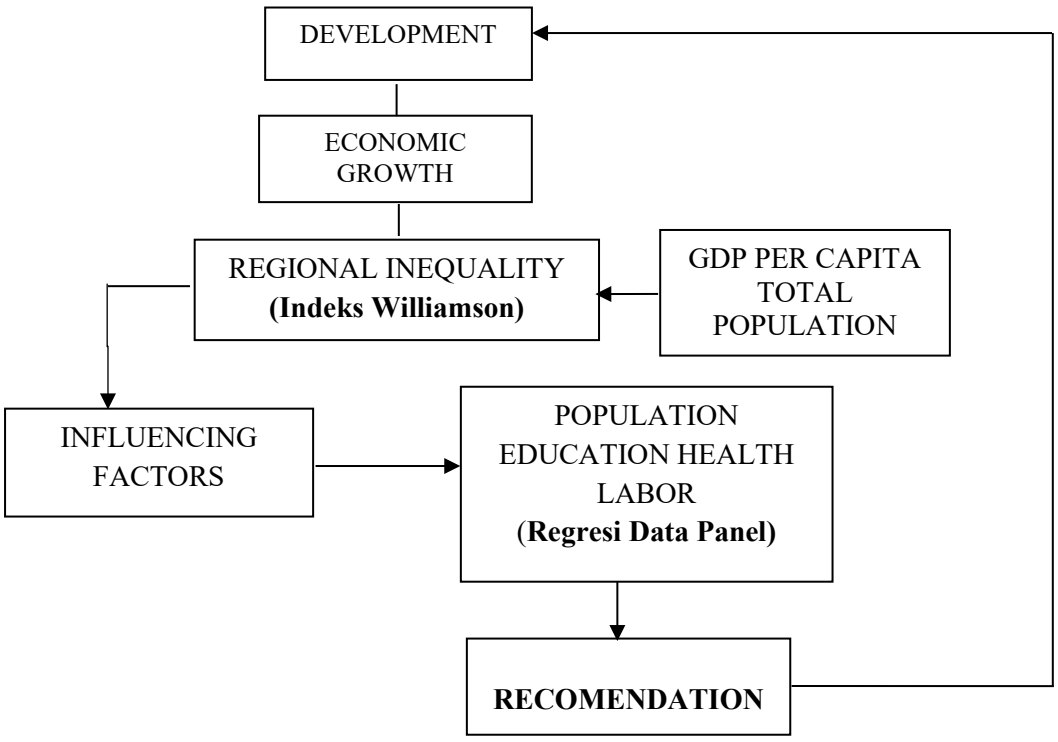
2.4.2. Lorenz Curve

The Lorenz curve shows the actual quantitative relationship between the percentage of income recipients and the percentage of total income actually received by the community during the year.

2.4.3. Williamson Index.

The Williamson Index is one of the measurement tools to measure the level of regional inequality originally used by Jeffrey G. Williamson. The calculation of the Wlliamson index is based on GRDP data of each region using the formula The measurement results of the Williamson Index value are indicated by the numbers 0 to 1 or 0 < VW < 1. If the Williamson index is closer to 0, the smaller the economic development inequality and if the Wlliamson index is closer to 1, the wider the economic development inequality (Williamson, 1965). The calculation of income distribution inequality among regions in Indonesia was started by Esmara (1975). Other researchers using the William-son framework in observing regional disparities have been conducted by Uppal and Handoko (1986), Sjafrizal (2012), Marisa et al (1999). These studies support Williamson's inverted-U hypothesis.

Framework



1. Williamson Index

To determine the inequality between regencies/cities in Maluku Province, it can be analyzed using a regional inequality index called the Williamson index. This regional inequality index is formulated as follows:

$$IW = \sqrt{\sum \frac{(Y_i - Y)2 \quad (\frac{f_i}{n})}{Y}}$$

Description:

IW = Williamson Index
Yi = GRDP per capita in Regency/City i
Y = Average GRDP per capita in Maluku Province
Fi = Total Population of Regency/City i
n = Population of Maluku Province

The Williamson Index formula uses GRDP per capita and population where the value obtained is between zero and one. With the indicator that if the Williamson inequality index number is closer to zero, it indicates smaller inequality and if the index number is further away from zero, it will indicate wider inequality. (Williamson, 1965).

2. Panel Data Regression Model Estimation

The panel data equation model which is a combination of cross section data and time series data is as follows:

$$IW_{it} = \beta_0 + \log\beta_1 JP_{it} + \log\beta_2 MYS_{it} + \log\beta_3 AHH_{it} + \log\beta_4 TK_{it} + e_{it}$$

Where:

IW	= Regional Inequality
Population	= Total Population
MYS	= Average Years of Schooling
AHH	= Age Expectancy
e	= error variable
β_o	= intercept
β1,β2,β3, β4	= regression coefficients of independent variables
i	= error component at time t for cross section unit i
i	= 1,2,3,4,5,6,7,8,9,10,11 (district/city cross-section data in Maluku)
t	= 2011, 2012, 2013, 2014, 2015, 2016. (time-series data)

RESULTS AND DISCUSSION

3.1. Level of Regional Inequality in Municipalities in Maluku Province

Regional autonomy as one of the decentralization processes in Indonesia shows districts/cities and villages as autonomous regions. In a vast country consisting of islands surrounded by oceans, decentralization is a logical consequence. It is hoped that decentralization will be able to develop regions that are left behind. In relation to the potential of the region, each district/city has a very high GRDP per capita, due to the presence of industry and development priorities in the area, causing economic inequality between districts/cities in Maluku Province. To see the inequality between regencies/cities in the province, the

Williamson index can be used. The results of the Williamson Index calculation for districts/municipalities in Maluku Province can be seen in Table 5.

The table shows that the value of the inequality index between districts/municipalities in Maluku Province from 2012 to 2016 is moderate, although from 2012 to 2016 there was a stagnation of inequality from 046 in 2012 remained at 0.46 in 2013 then decreased in 2014 to 0.45 and then fell to 0.44 in 2015-2016 so that the average inequality of Maluku Province is in the range of 0.45 in the moderate category.

Based on this, it can be interpreted that there is moderate inequality between districts/cities in Maluku Province.

Table 5. Williamson Index in Regency/City in Maluku Province in 2012 – 2016

No	Description	INDEKS WILLIAMSON					$\bar{X}$, MALUKU PROVINCE
		2012	2013	2014	2015	2016	
(1)	*(2)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
1	West Southeast Maluku Regency	0.48	0.45	0.43	0.43	0.41	**0,45**
2	Southeast Maluku Regency	0.13	0.17	0.22	0.24	0.28	
3	Central Maluku Regency	0.74	0.67	0.63	0.59	0.53	
4	Buru Regency	0.70	0.75	0.80	0.85	0.88	
5	Kep. Aru Regency	0.86	0.90	0.93	0.93	0.92	
6	West Seram Regency	0.12	0.12	0.12	0.11	0.11	
7	East Seram Regency	0.43	0.36	0.30	0.34	0.35	
8	Southwest Maluku Regency	0.54	0.50	0.46	0.33	0.37	
9	South Buru Regency	0.29	0.31	0.32	0.33	0.31	
10	Ambon City	0.24	0.23	0.22	0.20	0.20	
11	Tual City	0.55	0.55	0.54	0.50	0.48	
MALUKU PROVINCE		**0.46**	**0.46**	**0.45**	**0.44**	**0.44**	

Source: Processed Data

This is inseparable from differences in the ability of each region which has implications for gross value added (GRDP) in the economy between regions. Many regions have the ability to contribute to the Provincial GRDP but are still in a disparity condition/status. Although the average inequality of Maluku Province is 0.45 in the medium category, it is an empirical fact that the inequality of each Regency/City is very different, with disparities in the high, medium and low categories. In the low category, there are five districts/cities including Maluku Tengara, West Seram, East Seram, South Buru, and Ambon City, while in the medium category there are four districts namely West Maluku Tengara, Central Maluku, Southwest Maluku, and Tual City, while in the high inequality category are Buru and Aru Islands. It is very clear that inequality still occurs in every regency/city in Maluku Province.

Table 6. Average Regional Inequality of Districts/Municipalities in Maluku Province in 2012-2016

No	Description	IW($\bar{X}$)	Ranks	Remarks
(1)	(2)	(3)	(4)	(5)
1	West Southeast Maluku Regency	0.44	7	MIDDLE
2	Southeast Maluku Regency	0.21	2	LOW
3	Central Maluku Regency	0.63	9	MIDDLE
4	Buru Regency	0.80	10	HIGH
5	Kep. Aru Regency	0.91	11	HIGH
6	West Seram Regency	0.12	1	LOW

7	East Seram Regency	0.36	5	LOW
8	Southwest Maluku Regency	0.44	6	MIDDLE
9	South Buru Regency	0.31	4	LOW
10	Ambon City	0.22	3	LOW
11	Tual City	0.52	8	MIDDLE

Source: Processed Data

3.2. Effect of Population, Education, Health, and Labor on Regional Inequality.

The regression coefficient of the population variable denoted by (β_1) is -1.00. The coefficient value of the variable jp ((β_1) turns out to be statistically significant at the significance levelα (alpha) = 5% or 95% confidence level. This can also be seen by comparing the probability value (p-value) with the significance level where the population variable has a probability of 0.0020 > 0.05 (α = 5%). This result is in accordance with the hypothesis in the study which states that population has an effect on inequality in Maluku Province. The unbalanced pattern of population distribution and labor mobility, both in terms of inter-regional, inter-regional, and between rural and urban areas, shows that population has a significant influence on regional inequality, a large population for a country does not automatically become development capital, but can also become a burden for other residents. Related to the number of population that positively influences inequality, the phenomenon of potential in the district / city in Maluku province, as is the case in Buru Regency, the Gonung Botak gold mine has a very large impact on the area, this happens that Buru's inequality is very high, one of the factors is migration. In connection with this research, it is necessary to consider changes in the demographic structure in Indonesia, especially in Maluku Province. The growth rate of Life Expectancy is increasing, so the age structure of the population is getting older. If this trend continues, the pressure on regional inequality will be stronger.

The results of this study are possible because labor is an important capital in the development of a region, with a large number of workers accompanied by good skills. then the area can develop faster, on the contrary, if the large number of workers without being accompanied by good skills can become a terkebelang area, because labor without skills is a problem in the development of a region. Thus it can be proven that the labor variable has a negative and significant effect on the level of development inequality in Maluku Province.

This means that the increase in labor will reduce the inequality of economic development. The success of a development program is highly dependent on the utilization of available resources. So it is necessary for the government to intervene to reduce the imbalance of economic development between regions, for example by providing assistance to the regions to accelerate regional development, create jobs. The data above shows that employment conditions in Maluku province are increasing every year, compared to the labor force, those who work increase every year, from 2014 by 70,653 people increased to 609,786 people, the Labor Force Participation Rate (TPAK) increased from 2014 60.92% to 64, 51% in 2016 although the increase was not so significant but showed an increase. The Open Unemployment Rate (TPT) and open unemployment also showed a decrease. This shows that the economic conditions in Maluku province are getting better, this is the basis that labor has no effect on regional inequality in Maluku province.

CONCLUSION

From the results and tests conducted, it can be concluded as follows:

1. There is regional inequality in Maluku Province, with a medium category, namely during the 2012-2016 period of 0.45, due to the highest inequality contributor from Buru Regency, amounting to 0.88 and Aru Regency, amounting to 0.91, while the low category is, Southeast Maluku Regency, amounting to 0.21, West Seram by 0.12, East Seram by 0.36, then, South Buru by 0.31 and Ambon City by 0.22. This is because the availability of

infrastructure in the fields of transportation, communication, as well as industry, basic infrastructure, while health and education services, contribute to the advancement of the economy even though it is not yet evenly distributed across the 11 regencies/cities in Maluku Province.

2. The factors that influence regional inequality are Population, Education, Health, and Labor, which trigger regional inequality. The Total Population variable has a positive and significant effect on regional inequality, with a significance level of α (alpha) = 5% with a probability value (p-value) of 0.0020 <0.05. The Education variable has a positive and significant effect on regional inequality, with a significance level of α (alpha) = 5% with a probability value (p-value) of 0.017 < 0.05. Meanwhile, the Health variable negatively affects regional inequality, with a significance level of α (alpha) = 5% with a probability value (p-value) of 0.441 > 0.05. Furthermore, the Labor variable negatively affects regional inequality, with a significance level of α (alpha) = 5% with a probability value (p-value) of 0.154 > 0.05.

REFERENCES

Adisasmita, R. (2005). Dasar-dasar Ekono-mi Wilayah. Graha Ilmu Yogyakarta.

Arsyad, L. (2002). Pengantar Perencanaan dan Pengembangan Ekonomi. BPFE-UGM, Yogyakarta.

Badan Pusat Statistik (BPS). Maluku Dalam Angka. 2012-2017.

Esmara, H. (1975). *Regional Income Dispa-rities*. Bulletin of Indonesia Econo-mic Studies. Vol. XI No. 1; 41-57.

Ivanovich, A. (2014). Ketimpangan Wilayah Dan Kebijakan Penangulangan Di Indonesia: *kajian Isu strategis, Historis, dan paradigmatis Sejak Pra Kolonial.* Diterbitkan atas Kerja Sama antara Departemen Sains Komunikasi dan Pengem-bangan Masyarakat Fakultas Eko-logi Manusia IPB dengan Yayasan Pustaka Bogor Indonesia. Bogor.

Jhingan, M. L. (2010). Ekonomi Pemba-ngunan dan Perencanaan. PT. RadjaGrafindo Persada. Jakarta.

Marisa dkk. (1999). Kesenjangan Penge-luaran Pembangunan Antar Wila-yah dan Provinsi di Indonesia. Buletin Ekonomi dan Keuangan Indonesia. Vol. 1. No. 4; 416-421.

Kuznets, S. (1966). *Modern Economic Growth; Rate, Structure and Spread.* CT: Yale University Press. New Heaven.

Sirojuzilam. (2008). Disparitas Ekonomi dan Perencanaan Regional : Ketimpang-an Ekonomi Wilayah Barat dan Wilayah Timur Provinsi Sumatera Utara. Pustaka bangsa. Medan.

Sjafrizal,(2008). Ekonomi Regional: Teori dan Aplikasi: Baduose Media. Padang

Tarigan, R. (2004). Ekonomi Regional; Teori dan Aplikasi. PT. Bumi Ak-sara. Jakarta.

Thee, K. W. (1980). Pembangunan Ekonomi dan Pemerataan; Konsep dan Teori Distribusi Pendapatan dan Peme-rataan Pembangunan. LP3S. Jakar-ta.

Todaro,M.P dan Smith, S.C. (2011). Pembangunan Ekonomi di Dunia Ketiga, Erlangga, Jakarta.

Wibisono, Y. (2005). Sumber-sumber Pertumbuhan Ekonomi Regional; Studi Empiris Antar Provinsi di Indonesia. Jurnal Ekonomi dan Pembangunan Indonesia. Vol 5. No. 91-120.

Williamson, J. G. (1965). Regional *Inequa-litied and the Process of National development; a Descrep-tion of the Pattern.* In: Friedman, J. Alonso, W. (eds) Regional Policy. The MIT Press. Cambridge Massachusetts.