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SOCIAL SCIENCE AND EDUCATION | RESEARCH ARTICLE

Klassen Typology and Williamson Index to Measure Macroeconomics in South Sulawesi Province

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Abstract: This study was conducted to analyze the classification of economic growth of each district/city in South Sulawesi Province use Klassen typology, Williamson index, and logistic regression. Analyze income inequality between districts/cities in South Sulawesi Province. This study uses secondary data with a sample of fifteen years from 2005 to 2019. The results of the study show that: (1) several districts/cities have potential as developed and fast-growing areas, developed but depressed areas, fast-developing areas, and relatively underdeveloped areas; (2) income inequality in South Sulawesi Province is in a low condition; (3) economic growth and income disparity have a negative and significant effect on welfare in South Sulawesi Province. This means that economic growth and growth disparities affect the community's welfare in South Sulawesi Province. Economic development results do not only indicate the direction of achieving specific economic growth rates. Based on the results, it can be concluded that the economic growth has fluctuated. The Williamson Index shows that there are disparities. Partially, economic growth and income disparity significantly affect people's welfare in South Sulawesi Province. So that, the local government in its program is also expected to be able to more intensively carry out efforts to equalize income distribution social welfare.

Keywords: Economic Growth, Income Disparity, Social Welfare

JEL Code: A10, A12, B20, B16

1. INTRODUCTION

A country indeed will not be separated from economic activities. This economic activity occurs in every form of life activity (Wasdani & Prasad, 2020; Dahliah et al., 2020). It happens in all circles of society, both the lower middle class and the upper-class community, and its implementation in a developing country such as Indonesia. Indonesia is an archipelago that has thousands of islands and has 34 provinces (Arfah et al., 2020; Islamiah et al., 2021). Each region has its distinct characteristics, including natural resources, economy, socio-culture, customs, number and density of population, quality of human resources, geographical location, and facilities and infrastructure available in each region (Xu & Dobson, 2019). The differences in these characteristics are related to the growth capacity of each region, thus making development in some regions grow faster than the development of other regions. Therefore, development policies are carried out to achieve high economic growth by utilizing the potential and resources that exist and are different for each region. This process is carried out so that development can be felt more evenly. For this reason, the government's attention must be focused on all regions without any special treatment in certain areas (Xu & Dobson, 2019; Sochirca et al., 2016; Švarc, 2006).

Development has a goal to create community welfare; Community welfare can be seen from the increase in economic growth and the even distribution of income (Liyanaarachchi et al., 2016). Over an extended period, national development has resulted in significant progress. Still, at the same time, it has left various pressing problems to be addressed, including the disparity or inequality between



regions. An indicator of the success of a region's development can be seen from its economic growth rate. Therefore, each part always sets a high growth rate target in its regional development planning and goals. High and sustainable economic growth is the primary condition for the continuity of economic development. As the population continues to grow, additional income is needed every year. This can be met by increasing the aggregate output of goods and services or Gross Domestic Product (GDP) every year. So, according to macroeconomics, economic growth is an increase in GDP, which also means an increase in national income (Nguyen, 2019; Thierry et al., 2016). Regional autonomy policy is a means to create better development because this policy will increase economic growth and community welfare. Local governments will be more efficient in managing the resources available in each region and providing public goods to facilitate financial activities. Regional autonomy is also intended as an effort to overcome the inequality that occurs between areas. The inequality that causes inequality is a problem that must be solved. If inequality gets bigger, it will lead to conflict and increase the crime rate, so it can cause instability in an economy if it is allowed to continue. Therefore, this research is intended to find out how big the inequality between regencies/cities in South Sulawesi Province is. Based on the description of the background above, the main problems in this study are 1). How is the classification of each district/city in South Sulawesi Province for 2005-2019 based on Klassen Typology. 2). How big is the regional income inequality between districts/cities in South Sulawesi Province from 2005-2019. 3). How significant are economic growth and income disparity on welfare among districts/cities in South Sulawesi Province.

2. Literature Reviews

Economic development is one of the goals of development. Development broadly covers aspects of life, whether ideological, political, socio-cultural, defense and security, etc. Economic development is efforts to improve the standard of living, often with real per capita income (Xu & Dobson, 2019; Sajjad et al., 2020). Economic growth is achieved when there is an increase in the ratio between more significant input and output and economic development. Economic development means increased productivity and an increase in GDP (Sajjad et al., 2020). Peyroux in Arsyad put forward a theory of the Center for Growth (Pole Growth) which is the theory that forms the basis of the regional industrial development policy strategy that is widely used by various countries today, which states that in essence in this theory. The leading industry is the driving force in regional economic development (Sajjad et al., 2020; Peyroux et al., 2007). Furthermore, emerging relatively developed regions will affect relatively passive areas of the industry (Peyroux et al., 2007; Qiu et al., 2017). The existence of economic growth is fundamental because it can improve the welfare of the community. For GDP per capita to continue to increase, the economy must continue to grow and be higher than the rate of population growth. If the population growth is 2% per year, GDP growth must be more incredible than 2% per year. Tang (2008) pays attention to poverty concerning inclusive growth by departing from the issue of the income distribution. He observed that for decades, many developing countries had had extraordinary economic growth. Factors such as inequality, poverty, sectoral and labor issues are often mentioned in the descriptions of various inclusive growth concepts. Tang (2008); Ianchovichina & Lundstrom (2009) give a slightly different opinion, both of which pay attention to the issue of growth size. Ianchovichina and Lundstrom argue that inclusive growth is concerned with increasing the size of the economy and not just focusing on the distribution of resources. Inclusive growth is often associated with sustainable growth, which is a complex but straightforward concept, so the notion of sustainability is very multidimensional and multi-interpreted. According to Heal (1998) the idea of sustainability contains at least two dimensions: The first is the time dimension because sustainability is nothing but what will happen in the future. The second is the dimension of the interaction between the economic system, natural resources, and the environment (Arshed, 2017; Min et al., 2019). By looking at the intertemporal component that is an indicator of sustainable growth, it can be said that sustainable growth is inclusive growth, but inclusive growth is not necessarily sustainable (Heal, 1998; Blanchet & Fleurbaey, 2020). Thus, economic growth is inclusive if it reduces poverty, reduces income distribution inequality, and absorbs more labor. Growth is said to be inclusive if social opportunities can be spread across the population. Factors Affecting

Economic Growth of a country depends on its natural resources, human resources, capital, business, technology, etc.

The level of development determines inequality, ethnic heterogeneity; inequality is also related to dictatorships and governments that fail to respect property rights. The most commonly discussed inequality is economic inequality (Roe & Siegel, 2011; Dahliah & Nur, 2021). In inequality, there is a fundamental imbalance in economic development between regions and a relative imbalance between the potential and the level of welfare that can cause relations between parts (Roe & Siegel, 2011). The gap does not apply in all areas with the same strength (class). There are still general aspects that can give some generalizations. the leading causes of the gap are: (a) Geographical factors, an extensive area, distribution of national resources, energy sources, agricultural aids, topography, climate, and rainfall will not be evenly distributed. (b) Historical factors, the level of development of society also depends on the past to prepare for the future. The form of economic organization that has existed in the past is a fundamental reason for incentives for workers and employers. The feudal system provided minimal incentive to work hard. An industrial design in which workers feel exploited, working without rest, restrictive planning and strategy will provide little incentive and cause development to be hampered. (c) Political Factors, (d) Government Policy Factors, almost all rich countries apply the concept of a welfare state. (e) Organizational factors (bureaucracy), (f) Social factors, many social factors, are barriers to development. Residents in underdeveloped areas have institutions and attitudes that are conducive to economic growth. (g) Economic Factors. The Gini Index or the complete Corrado Gini formulates a measure to calculate the level of personal income inequality in the aggregate received above a certain level. The findings are often referred to as the Gini coefficient or Gini index. The Gini coefficient measures aggregate inequality and can have any value, ranging from 0 (perfect equality) to 1 (perfect inequality), describing the degree of income inequality. The coefficient is closer to 0 means that the income distribution is more even; on the contrary, the coefficient closer to 1 standard that income distribution is more unequal. The Gini coefficient for countries with an unequal income distribution is between 0.50 and 0.70, while for countries with relatively even income distribution, the Gini coefficient is between 0.20 and 0.35. Welfare is a measuring point for a society that is already in a prosperous condition. Welfare can be measured by health, economic conditions, happiness, and quality of life (Roe & Siegel, 2011; Bognar, 2005). Measurement of productivity is seen from the form of sacrifice and results of workers. Wages result from workers' gifts in the form of rupiah, while the hours and days worked are a form of skill that a worker has made. Welfare is always associated with material things, where the higher the productivity, the higher the income generated. Another measure of welfare level can also be seen from non-material as stated by (Hanemann, 1984) through education, health and nutrition levels, freedom to choose a job and guarantee a better future.

2.1. Theoretical Relationship and Prior Research

Ningsih et al. (2019) concluded that the results of the Williamson Index calculation show that the level of development inequality in the province of South Sumatra from 2010 – 2017 and 2015-2017 is in the high category because the IW value is > 0.35 . In 2014, the development inequality was very high because the IW value was close to 1, which was 0.90. The results of the Pearson correlation analysis show that there is a negative relationship between economic growth and development inequality of -0.253 with a significance value of $0.545 > 0.05$. This means that an increase in economic growth will lead to a decrease in inequality in development. These results also prove that the Kuznets hypothesis of an inverted U-curve applies in South Sumatra in 2010-2017. To minimize the impact of economic growth on development inequality, it is necessary to have an equitable development program in all fields. stated that the economic growth of West Nusa Tenggara Province tends to fluctuate, Hipziwaty et al. (2019) which is influenced by the fluctuations in the value of the financial sector. The fluctuating economic growth was caused by the changes in the value of various economic sectors that became the leading sectors, such as agriculture, construction, wholesale and retail trade, and car and motorcycle repairs. The average economic growth between districts/cities in West Nusa Tenggara Province is 6.0%, still moderate. The income disparity between communities/towns of West Nusa Tenggara Province as measured by the Williamson index in the 2010-2016 period, indicated by

the Williamson index value greater than 0. The Williamson index shows a tendency to decrease every year and belongs to the moderate inequality criteria. Based on the estimation results of the relationship between economic growth variables and income disparity on the welfare of the people of West Nusa Tenggara Province as measured using the HDI in 2010-2016 using panel data regression analysis with the Fixed Effect (FEM) model as the best model. It was found that the economic growth variable was positively related but not significantly to the welfare of the people of West Nusa Tenggara Province. Then the income disparity variable is mainly related to the interest of West Nusa Tenggara Province. Nababan & Hayati (2019) conclude that the Williamson Index shows that income inequality between provinces in Java is still high, with an average of 0.6, which indicates that Java Island has high disparities income distribution is uneven. Every year between regions on the island of Java. The Lorenz curve and the Gini ratio show that the income disparity in the isle of Java from 2011-2016 has increased, which is indicated by the Lorenz curve getting farther away from the line of equality. The Labor Force shows a positive and insignificant effect on economic growth. This means that the marginal productivity of labor in Java is low, so it does not affect economic growth. Average Length of Schooling shows that the average length of schooling has a positive and significant effect on economic growth. This means that the longer formal education passed, the more it will produce a more productive workforce.

3. Research Method and Materials

3.1. *Klassen Typological Analysis*

The Klassen Typology technique can be used through two approaches. The first is a sectoral approach that bases the grouping of a sector by looking at the growth and contribution of a particular industry to the total GDP of a district/city. The second is a regional approach based on two leading indicators: economic growth and income or income. Gross Regional Domestic Product (GDP) per capita area (Carvalho et al., 2012). The observed areas can be divided into four classifications by determining the average economic growth as the vertical axis and the average income per capita as the horizontal axis. According to Regional Typology, regions are divided into four classifications:

1. Quadrant I: Fast-developing and fast-growing regions, namely Regency/City areas with an average per capita GRDP above the provincial average GDP per capita and an average economic growth rate above the regional average economic growth rate.
2. Quadrant II: Developed but depressed regions, namely districts/cities with an average GDP per capita above the provincial GDP per capita and an average economic growth rate below the average local economic growth rate.
3. Quadrant III: Fast developing regions, namely districts/cities with an average GDP per capita below the average GDP per capita for the province and an average economic growth rate above the average provincial economic growth rate.
4. Quadrant IV: Relatively underdeveloped regions are districts/cities with an average per capita GDP below the provincial average GDP and an average economic growth rate below the regional average.

3.2. *Williamson Index*

Williamson's formula relates several variables, namely the number of residents in a city and the level of GDP, which are assumed to be hierarchical. If the count is a district, then the comparison is with the province that houses the district. If it is the province that counts, then the comparison is with the national figure. The measure of income inequality to analyze how big the gap is between regions/regions is through the calculation of the Williamson index. The size of the Williamson index states that the magnitude of IW is $0 < IW < 1$; $IW = 0$, means that regional development is very evenly distributed; $IW = 1$, it means that regional development is very uneven; $IW < 0$, means that regional

development is getting closer and closer; $IW < 1$, it means that regional development is getting closer to inconsistent.

3.3. Panel Regression Analysis

Panel data regression is used to analyze the relationship between economic growth and income disparities between districts/cities in South Sulawesi Province. The research model used in this study can state that people's welfare is a function of economic growth, and income disparity can be written as follows: $KSJRM = f(PE, DP)$. From the above economic model, it is then transformed into the following econometric model specifications:

$$KSJRM_{it} = \beta_0 + \beta_1 PE_{it} + \beta_2 DP_{it} + \epsilon_{it}$$

Note:

KSJRM	=Community Welfare
PE	=Economic Growth
DP	=Income Disparity
β_0	= Numbers constants β_1
β_1	= Coefficient of each variable
i	= 1,2,...,N (cross section data of in South Sulawesi Province)
t	= 1,2,...,T (time series data 2010-2019)
ϵ_{it}	= error term

4. Results and Discussion

4.1. Economic Growth

Economic growth is one of the macro indicators to see the actual financial performance in a region. The economic growth rate is calculated based on changes in GDP based on constant prices for the year in question against the previous year. Economic growth can be seen as an increase in the number of goods and services produced by all business fields of economic activity in an area over one year. Data on the GDP growth rate of South Sulawesi Province at constant prices by the business field for fifteen years from 2005 to 2019 is shown in table 1 below:

Table 1: Growth Rate of GDP at Constant Prices for South Sulawesi Province by Business Field

Years	Growth Rate of GDP (%)
2005	6.05
2006	6.72
2007	6.34
2008	7.78
2009	6.20
2010	8.63
2011	8.13
2012	8.87
2013	7.63
2014	7.57
2015	7.19
2016	7.42
2017	7.21
2018	7.06
2019	6.92

Source: Central Statistics Agency of South Sulawesi Province (2021)

4.2. Analysis of Economic Growth between Regencies/Cities in South Sulawesi Province

GDP is one indicator that affects the success of a region's development. An increase or decrease in GDP indicates that an area has increased or decreased in the development sector and economic activity. In contrast, economic growth is divided into several economic sectors and is a source of job creation. The high and low economic growth is reflected in the value of GDP every year. If the development of each financial sector increases, it will increase its contribution to the size of the region's GDP. Still, the increase in GDP every year does not entirely make a rise in economic growth every year; this can be seen in the table. The results of the calculation of economic growth between districts/cities in South Sulawesi Province are presented in Table 2 as follows.

Table 2: Economic Growth in South Sulawesi Province Based on Constant Prices

Regencies/City	Economic Growth between Regencies/Cities (%)							
	2005	2006	2007	2008	2009	2010	2011	2012
Kep.Selayar	3,90	5,57	6,45	7,27	7,89	7,96	8,88	7,88
Bulukumba	4,48	6,38	5,36	8,06	6,47	5,71	5,49	9,65
Bantaeng	4,35	5,10	5,37	6,73	7,32	8,32	9,38	9,67
Jeneponto	1,21	3,97	4,06	5,78	5,38	6,59	8,44	7,55
Takalar	5,58	5,91	6,04	6,19	6,58	8,66	7,59	6,58
Gowa	5,74	6,17	6,19	6,92	7,99	6,87	7,46	8,15
Sinjai	5,23	6,11	5,43	7,45	7,02	5,89	7,60	7,32
Maros	3,12	4,33	4,58	5,61	6,27	12,40	11,24	11,14
Pangkep	5,61	5,92	6,12	7,16	5,91	7,96	9,84	8,26
Barru	4,94	4,90	4,94	6,98	5,72	6,06	8,13	8,39
Bone	4,31	5,95	6,01	7,24	7,54	7,61	6,40	8,21
Soppeng	2,85	6,63	5,37	7,76	6,81	6,32	7,17	6,93
Wajo	5,97	5,66	5,87	7,40	5,10	5,85	10,11	6,50
Sidrap	8,25	6,96	5,46	8,23	6,66	6,24	9,63	8,93
Pinrang	6,04	4,12	5,14	6,73	7,65	5,70	7,71	8,51
Enrekang	5,91	3,77	5,11	6,49	6,62	5,78	8,08	7,30
Luwu	7,16	5,51	5,53	5,73	6,82	7,15	7,89	7,00
Tana Toraja	3,67	5,22	5,35	7,18	6,10	7,67	7,78	8,58
Luwu Utara	8,69	7,61	6,83	9,65	6,90	6,27	8,04	6,81
Luwu Timur	5,57	6,86	5,75	-2,44	-4,04	13,19	-4,29	5,62
Kota Makassar	7,16	8,09	8,11	10,52	9,20	9,83	10,36	9,64
Kota Pare-Pare	5,98	6,96	6,98	7,56	7,93	7,99	8,42	8,80
Kota Palopo	7,72	6,32	6,53	7,44	7,86	6,67	7,90	7,00

Source: Central Statistics Agency of South Sulawesi Province (2021)

A. *Klassen Typological Analysis*

The *Klassen Typology* method determines the grouping of economic sectors in South Sulawesi Province according to their growth structure. Using the *Klassen Matrix*, four sector groups can utilize the growth rate and contribution value. The Growth Rate and Sector Contribution of South Sulawesi Province GDP and Regency/City GRDP 2005-2019 can be seen in the following table 3.

Table 3: Regional Typology Criteria Based on *Klassen Typology*

Quadrant I: Developed and Fast-Growing Regions: Makassar, Pangkep.	Quadrant II: Developed But Depressed Areas Luwu Timur.
Quadrant III: Fast Developing Area: Selayar, Bantaeng, Takalar, Bone, Luwu Utara.	Quadrant IV: Relatively Underdeveloped Area Bulukumba, Jeneponto, Gowa, Sinjai, Maros, Barru, Soppeng, Wajo, Sidrap, Pinrang, Enrekang, Luwu, Tana Toraja, Pare-pare, Palopo.

B. Income Disparity Analysis Between Districts/Cities Using the Williamson Index Analysis Tool.

The Williamson Index measures income inequality to analyze how big the gap is between districts/cities. The results of calculating the level of inequality between districts/cities in South Sulawesi Province using the Williamson Index can be seen in Table 4. The Williamson Index calculations show a disparity or income gap between districts/cities in South Sulawesi Province in 2005-2019, which is indicated by the Williamson index value greater than 0. The lowest gap is in Wajo Regency, Pare-Pare City, and Palopo City, with an average Williamson index value in 2005-2019 of 0.02. It can be seen in the table above that high inequality is found in Makassar City with an average of 0.40, which is included in the moderate criteria. On average, the gap between districts/cities in South Sulawesi Province during 2005-2019 is in a low category, indicated by an average value of 0.09.

Table 4: Williamson Index in South Sulawesi Province

Regencies/City	Williamson Index							
	2005	2006	2007	2008	2009	2010	2011	2012
Kep. Selayar.	0,05	0,05	0,05	0,05	0,05	0,10	0,04	0,04
Bulukumba	0,06	0,06	0,06	0,07	0,07	0,18	0,10	0,10
Bantaeng	0,05	0,05	0,05	0,05	0,05	0,12	0,04	0,04
Jeneponto	0,11	0,11	0,12	0,12	0,12	0,18	0,11	0,11
Takalar	0,08	0,08	0,08	0,08	0,08	0,15	0,08	0,08
Gowa	0,14	0,14	0,14	0,15	0,14	0,25	0,14	0,14
Sinjai	0,04	0,04	0,04	0,04	0,04	0,13	0,04	0,04
Maros	0,07	0,07	0,08	0,08	0,08	0,17	0,02	0,03
Pangkep	0,09	0,06	0,07	0,06	0,06	0,12	0,07	0,07
Barru	0,04	0,04	0,04	0,04	0,04	0,11	0,04	0,04
Bone	0,09	0,09	0,09	0,09	0,09	0,24	0,09	0,09
Soppeng	0,03	0,03	0,03	0,03	0,03	0,12	0,04	0,04
Wajo	0,01	0,01	0,01	0,00	0,00	0,15	0,02	0,02
Sidrap	0,01	0,00	0,00	0,01	0,01	0,14	0,04	0,04
Pinrang	0,04	0,04	0,03	0,03	0,03	0,14	0,03	0,03
Enrekang	0,05	0,05	0,05	0,06	0,06	0,13	0,06	0,06
Luwu	0,03	0,03	0,03	0,04	0,04	0,16	0,06	0,06
Tana Toraja	0,18	0,18	0,18	0,11	0,10	0,14	0,08	0,08
Luwu Utara	0,04	0,04	0,04	0,05	0,05	0,14	0,06	0,06
Luwu Timur	0,50	0,49	0,49	0,41	0,35	0,01	0,18	0,16
Kota Makassar	0,34	0,34	0,36	0,36	0,38	0,18	0,44	0,45
Kota Pare-Pare	0,04	0,00	0,00	0,02	0,04	0,09	0,00	0,00
Kota Palopo	0,01	0,01	0,00	0,00	0,00	0,10	0,01	0,01

C. Analysis of the Relationship between Economic Growth and Income Disparity on Welfare Between Regencies/Cities in South Sulawesi Province Using Panel Data Regression.

Panel data regression is used to analyze the relationship between economic growth and income disparity on the welfare of the people in South Sulawesi Province. The data used in this study are cross-section and time-series data, where this data describes several research objects in different periods and is processed using the E-views ten program. The things in this study are 23 districts/cities in South Sulawesi Province. Three models can be selected in panel data regression and which model is the most appropriate. The suitable model is used to estimate the panel data regression parameters in analyzing the relationship between economic growth and income disparity with the welfare of the people in South Sulawesi Province in 2005-2019. The coefficients of each variable are depicted in table 5. From the estimation results above, the panel data regression equation can be formed as follows:

$$KSJRMit = 71.99869 - 0.415164PEit - 8.962693 DPit + \epsilon it$$

The equation of the regression model can be explained in detail as follows:



- 1) $\beta_0 = 71.99869$ is a constant value. This value indicates that the level of community welfare is 71.99869 percent if the variables of economic growth and income disparity are constant.
- 2) $\beta_1 = -0.415164$ is the regression coefficient of the economic growth variable. This value shows the relationship between economic growth and community welfare of -0.415164. Suppose there is an increase in the economic development of one percent. In that case, it will reduce the level of community welfare as measured by the HDI indicator by 0.415164 percent, assuming that other variables are constant.
- 3) $\beta_2 = -8.962693$ is the regression coefficient of the income disparity variable. This value shows the relationship between income disparity and community welfare of -8.962693. Suppose there is an increase in income disparity by one percent. In that case, it will reduce the level of community welfare as measured by the HDI indicator by 8.962693 percent, assuming that other variables are constant.

Table 5: Fixed Effect Model (FEM) Panel Data Regression Model.

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Constant	73.1	0.41	141.2	< 0.01
Economic growth	-0.52	0.07	-6.56	< 0.01
Disparity	-8.97	2.42	-3.86	< 0.01
R-squared	0.82	Mean dependent var		69.1
F-statistic	55.60	Durbin-Watson stat		0.76
Prob (F-statistic)	< 0.01			

From the estimation results of the model, it is known that the probability for the variable Economic Growth has a possibility of 0.00000, which is smaller than 0.05, which means that the variable of economic growth is significantly related to the community's welfare. Meanwhile, the income disparity variable is significantly associated with the community's interest with a probability value of 0.0001, more diminutive than 0.05. From the panel data regression equation, statistical tests were then carried out, including a) t-test (partial relationship test), b) F-test (simultaneous relationship test). c) Test R^2 (coefficient of determination). The t-statistic test shows how far the relationship of each independent variable individually in explaining the variation of the dependent variable.

Table 6. T-Test between Economic Growth and Income Disparity on Community Welfare

Variables	t- Statistics	t-estimated	Probability	$\alpha = 5\%$	Information
Economic growth	-6.56	1,66	0.0000	0,05	Support
Disparity	-3.86	1,66	0.0001	0,05	Support

The estimation results shown in table 6 show that partially the independent variables (economic growth and disparity) have a significant relationship to the dependent variable (community welfare) with a negative value. The economic growth variable has a t-statistic value of $-6.543032 < t\text{-estimated } 1.96690$ and a probability value of t-statistic $0.0000 < 0.05$. so H_0 is rejected, and H_1 is accepted, meaning that partially economic growth is negatively and significantly related to the welfare of the Regency/city community in South Sulawesi Province, so the hypothesis is accepted. The income disparity variable has a t-statistic value of $-3.846369 < t\text{-calculated } 1.64931$ and a probability value of t-statistic < 0.01 . Then H_0 is rejected, and H_1 is accepted, meaning that partially income disparity is negatively and significantly related to the community's welfare between districts. /city in South Sulawesi Province, so the hypothesis is accepted. Tests on the relationship of all independent variables in the model can be done with a simultaneous test (F-test). The F-statistical test shows whether all the independent variables included in the model have a reciprocal relationship with the dependent variable. From the estimation results by 5%, from the distribution F-estimated, the F-table value for F-calculated = 0.05 is 3.02. Based on the results of calculations through the E-views 10 program, the F-statistics value of 55.58884 can be compared so that it can be compared that $F\text{-statistics} > F\text{-estimated}$. The F-statistical probability value reinforces this = < 0.01 , then H_0 is rejected, and H_1 is accepted, meaning that it has a significant and simultaneous effect. All independent variables can explain the dependent variable or together. The coefficient of determination (R^2) essentially measures how far the

model can explain variations in the dependent variable. The value of the coefficient of determination ranges from zero to one ($0 < R^2 < 1$). A small value of R^2 means that the ability of the independent variables to explain the dependent variables is minimal. A value close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable. The calculations using the E-views 10 program show the value of R-squared = 0.806545, meaning that the dependent variable (community welfare) between districts/cities in South Sulawesi Province can be explained by independent variables (economic growth and income disparity) of 80.65%. In comparison, other variables outside the model explain the remaining 19.35%.

4.3. Discussion

The fluctuating economic growth is caused by the ups and downs of the value of the leading sector in each district/city in South Sulawesi Province. It will affect the rate of economic growth of a region. Moreover, districts/cities in South Sulawesi Province are still dominated by the agricultural sector, which depends on the state of the economy. Nature or weather. The study's results using an analysis of the Regional Typology Classification based on Klassen Typology, which divides the area into four quadrants: fast-growing and fast-growing areas, developed but depressed areas, rapidly growing areas, and relatively underdeveloped areas. The application of the regional classification of districts/cities in South Sulawesi Province consists of 23 districts/cities. The results of the calculation of the typology of Klassen between districts/cities in South Sulawesi Province in 2005-2019 states that neighborhoods/cities that are classified as:

a) *Developed and fast-growing area (Quadrant I)*

Developed and fast-growing regions (Quadrant I) are Makassar City and Pangkep Regency, this is because the average value of GDP per capita and the average economic growth rate of Makassar City and Pangkep Regency are above the average GDP per capita and the average growth rate the economy of South Sulawesi Province, can be seen in table 7.

Table 7: Klassen Typological Results

Regencies/city	Average GDP Per capita	The average rate of economic growth	Average GDP Per capita	The average rate of economic growth
	Regencies/city	Regencies/city	South Sulawesi Province	South Sulawesi Province
Kota Makassar	41,70	8,65	21,04	7,31
Pangkep	27,36	7,37		

Makassar City acts as a trade and service center for industrial activities, government activities, and education and health services. In addition, geographically, Makassar City is very strategic in terms of economic and political interests. From a financial point of view, Makassar City is a distribution service node that will undoubtedly be more efficient than other regions. Meanwhile, Pangkep Regency has a leading sector in the trade, processing industry. It has a reasonably vast potential for aquaculture, covering 12,527 hectares (gross area) with production consisting of tiger shrimp, fire shrimp, tilapia, seaweed, and other fish. This drives the high GDP per capita and the rapid economic growth rate of Makassar City and Pangkep Regency compared to South Sulawesi Province. It is included in the category of developed and fast-growing regions (Quadrant I).

b) *Developed but depressed area (Quadrant II)*

Those included in the criteria for developed but depressed regions (Quadrant II) are East Luwu Regency. East Luwu Regency has an average GDP per capita above the average GDP per capita of South Sulawesi Province. A moderate economic growth rate below the average economic growth rate of South Sulawesi Province can be seen in table 8. East Luwu Regency has leading sectors, namely the agricultural sector, fisheries, manufacturing, trading industry sectors, and the mining sector. So far,

the main attraction for East Luwu Regency for investors is natural resources, starting from the mining sector, namely nickel and iron, and in the agricultural industry in a broad sense, such as food crops, plantations, and fisheries. In addition, East Luwu Regency currently has a high export value for South Sulawesi Province, contributing 45% of the highest total export value of South Sulawesi. In an effort made by the East Luwu Regency government to attract investors, the government created policies that made it easier for investors and allowed investors to invest in East Luwu Regency by fulfilling the requirements without having to visit directly. So this is what drives the high average GDP per capita in East Luwu Regency compared to the average GDP per capita of South Sulawesi Province.

Table 8: Klassen Typological Results

Regencies/city	Average GDP Per capita	The average rate of economic growth	Average GDP Per capita	The average rate of economic growth
	Regencies/city	Regencies/city	South Sulawesi Province	South Sulawesi Province
Luwu Timur	38,39	3,78	21,04	7,31

c) *Fast-growing area (Quadrant III)*

The fast-developing areas (Quadrant III) include Selayar Islands Regency, Bantaeng Regency, Takalar Regency, Bone Regency, and North Luwu Regency. This is because the district's average GDP per capita is below the average per capita GDP of South Sulawesi Province, above the average economic growth rate of South Sulawesi Province, as shown in table 9.

Table 9: Klassen Typological Results

Regencies/city	Average GDP Per capita	The average rate of economic growth	Average GDP Per capita	The average rate of economic growth
	Regencies/city	Regencies/city	South Sulawesi Province	South Sulawesi Province
Kepulauan Selayar	13,97	7,62	21,04	7,31
Bantaeng	15,02	7,59		
Takalar	11,65	7,37		
Bone	14,81	7,38		
Luwu Utara	14,07	7,62		

As seen in Table 9, the average GRDP per capita of the Selayar Islands, Bantaeng, Takalar Regency, Bone Regency, and North Luwu is still very low compared to the Per capita GDP of South Sulawesi Province. This is because the Selayar Islands, Bantaeng, Takalar, Bone, and North Luwu are still dominated by the agricultural sector as an economic structure, as follows: Selayar Islands has a competitive advantage and an immense contribution value in the economy of the Archipelago Selayar, in this case, is the agricultural sector on food crop commodities, the most superior commodities to be used as the basis for the food crop sector in the Selayar Islands are corn, peanuts, cassava, and sweet potatoes. In addition, the Selayar Islands is the largest copra producer in South Sulawesi. Along with the drop in national copra prices, the impact on coconut/copra farmers in all regions in Indonesia, the effect also on copra farmers in the Selayar Islands. So that regional income is experiencing obstacles that can decrease the GDP of the Selayar Islands. The agricultural sector is a sector that is highly relied on by the Bantaeng because most of the population works as farmers. Potato is one of the most prominent horticultural crops. In addition to potatoes, other horticultural crops are cabbage, carrots, and fruits such as bananas and mangoes. Takalar has abundant natural resource potential, including a 500-hectare pond with a single harvest that can produce 40 to 50 tons of shrimp, seaweed which is potential in Takalar. Because it has lawi-law that is much better than other areas and has a tourist attraction in great demand for local tourists, including Topejawa Beach and Galesong. Bone has superior commodities in the agricultural and processing sectors, such as the food processing industry, non-food agrochemical industry, forest products, metal machinery and electronics industry, and the agricultural product processing industry. North Luwu has potential in

the agricultural and plantation sectors. For plantations, the most significant primary commodities are cocoa and oil palm. North Luwu Cocoa is one of the most critical contributors in South Sulawesi Province. Besides that, there is also potential for spices, coffee, and others. While from the mining sector, namely gold and rampi.

d) Relatively underdeveloped areas (Quadrant IV)

Included in the category of relatively underdeveloped areas (Quadrant IV), namely; Bulukumba, Jeneponto, Gowa, Sinjai, Maros, Barru, Soppeng, Wajo, Sidrap, Pinrang, Enrekang, Luwu, Tana Toraja, Pare-Pare City, Palopo City, with an average The average per capita GDP and the average rate of economic growth are below the average per capita GDP of South Sulawesi Province, can be seen in table 10. This is because the regencies/cities in South Sulawesi still rely heavily on the agricultural sector as the leading sector of each region. The circulation of money that occurs in people with farming and plantation main jobs is still deficient. This is because regencies/cities generally favor the agricultural sector as a source of income, and the population also dramatically influences the level of GRDP per capita of districts/cities in South Sulawesi Province because if the GDP of an area increases with a high rate of population growth, then its GDP per capita will increase. Low as in Gowa Regency.

Table 10: Klassen Typological Results

Regencies/city	Average GDP Per capita	The average rate of economic growth	Average GDP Per capita	The average rate of economic growth
	Regencies/city	Regencies/city	South Sulawesi Province	South Sulawesi Province
Bulukumba	11,46	6,52	21,04	7,31
Jeneponto	9,68	6,16		
Go	9,78	7,22		
Sinjai	15,46	6,82		
Maros	20,89	6,80		
Barru	14,60	6,57		
Shopping	15,94	6,75		
Wajo	18,68	6,09		
Sidrap	15,84	7,24		
Pinrang	18,49	6,93		
Enrekang	12,38	6,06		
Luwu	14,62	6,96	21,04	7,31
Tana Toraja	9,89	6,82		
Kota Pare-pare	18,89	7,15		
Kota Palopo	17,16	7,16		

e) Income Disparity Analysis Between Districts/Cities Using the Williamson Index Analysis Tool

Differences in regional characteristics in the form of natural resources encourage development inequality apart from other factors such as human resources, social resources, artificial resources (availability of socio-economic facilities and infrastructure), regional economic characteristics, and local government policies. (Anwar, 2005). Along with the continued development in a region, it will be followed by development inequality. This phenomenon shows that inequality problems will arise in the development process, which is spatial. This condition indicates differences in development and welfare in a region; some regions achieve fast economic growth while others experience slow growth. The results of calculations using the Williamson Index show an income disparity between districts/cities in South Sulawesi Province in 2005-2019, as indicated by the Williamson Index value greater than 0. The lowest gap is in Wajo Regency, Pare-Pare City, and Palopo City, with an average Williamson Index value for 2005-2019 of 0.02. It is estimated that the decline in income disparities between regions is caused by regional autonomy and fiscal decentralization. Provincial autonomy and budgetary decentralization provide significant changes to equity and welfare because policies are

determined according to the potential of each region and are better able to take into account regional conditions in the provision of goods such as infrastructure, education, and health. The highest gap is in Makassar City, with an average Williamson Index value for 2005-2019 of 0.40. This inequality occurs because of the concentration of primary sector economic activities in certain areas. Only part of the benefits are enjoyed, and the differences in natural resources are owned by regencies/cities, affecting environmental conditions and infrastructure between regions. Infrastructure in health and education must be prioritized and improved by the South Sulawesi provincial government. Because this is a very supportive factor, human resources continue to develop and manage natural resources well so that they have high added value for the progress of the region itself. This infrastructure development must be evenly distributed in every area in South Sulawesi Province so that inequality between areas is reduced or no longer exists.

5. Conclusion

The prosperity of the community decreases, the economy will reach a shallow level of development in this situation. The income of workers only comes to the story of enough to live (subsistence). The results of this study are not in line with the theoretical basis put forward by Kuznets, which states that one of the characteristics of modern economic growth is the high growth of output per capita (Todaro, 2006). Output growth in question is GDP per capita. High output growth changes consumption patterns to meet needs. This means that the increasing economic growth, the higher the growth of output per capita and changing consumption patterns. In this case, the level of people's purchasing power will be higher. The increased purchasing power of the people will increase the Human Development Index because people's purchasing power is one of the composite indicators in the HDI, called the income indicator. Economic development results do not only indicate the direction of achieving specific economic growth rates. Based on the results, it can be concluded that the economic growth between regencies in South Sulawesi Province has fluctuated. Typological classification based on Klassen's typology, some areas are categorized as developed and fast-growing areas (Quadrant I), developed but depressed areas (Quadrant II), fast-developing areas (Quadrant III), and relatively underdeveloped areas (Quadrant IV) The Williamson Index shows that there are disparities between districts in South Sulawesi Province. Partially, economic growth and income disparity significantly affect people's welfare in South Sulawesi Province. Therefore, in addition to pursuing a high rate of economic growth, the local government in its program is also expected to be able to more intensively carry out efforts to equalize income distribution and human development. This, of course, has an impact on the community's welfare between districts/cities of South Sulawesi Province and local governments in medium-term development policies. Or in the long term, prioritize development with a spatial dimension not only sectoral but also pay attention to the geographical location of economic activity and reduce income inequality in South Sulawesi Province. It is hoped that the regional government should develop technology and attract investors from outside the region to create superior products to increase regional income.

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