

The Disparity of Human Development Index in Central Jawa

Joko Susanto, Didit Welly Udjianto

Universitas Pembangunan Nasional Veteran Yogyakarta,
E-mail address jokosusanto@upnyk.ac.id; E-mail address diditwellyudjianto@upnyk.ac.id

Abstract

This study aims to explore the disparity of the Human Development Index (HDI) in Central Java. The data is secondary data published by Bureau Central Statistics, including the Human Development Index (HDI) and economic growth for 2011-2019. The study used Williamson Index and Klassen Typology to explore the disparity of the Human Development Index (HDI). The results showed that the Williamson Index decreased along the 2011-2019 period. This means that disparity in the Human Development Index (HDI) was a decline. The situation is following high economic growth occurred in several regencies. Although they have a low score in the Human Development Index (HDI), some regencies enjoy high economic growth. An increase in economic growth allowed a rise in expenditure, leading to a rise in the Human Development Index (HDI).

Keywords: Disparity, HDI



This is an open access article under the CC-BY-NC license.

I. INTRODUCTION

There are some classical problems of economic development that occurred in many countries. These problems include low economic growth, high poverty rate, and disparity of income (Peterson, 2017). The low economic growth did not allow the government to raise a standard of living. Low economic growth indicated a limited output resulted in the production process. A limited output cannot encourage a significant rise in consumption, while an increase in consumption a pre-requirement for an increase in standard living. Higher consumption indicated more goods and services used to fulfill population needs. With more output consumed, the population has enjoyed higher utilities. However, a restricted resource, capital, labor, and technology hampered an effort to raise output. Significant growth is achieved only by using more resources, capital, labor, or advanced technology.

Also, poverty alleviation is an indicator of the success of the development program. A reduction in the poverty rate needs an increase in income, accompanied by a decline in population growth (Sinding, 2009). Suppose a raise in income is accompanied by a significant increase in population growth so that per capita income relatively unchanged. Per capita income is associated with the poverty rate. Generally, higher per capita income is accompanied by a lower poverty rate, and vice versa.

However, even though an increase in economic growth does not accompany a rise in population numbers, this growth will not reduce the poverty rate if the income distribution is still uneven (Beker, 2016). The disparity of income indicated that not all communities were involved in the manufacturing process. This means that some people are unemployed. In some developing countries, including Indonesia, unemployed people do not get unemployment benefits due to the limited government

budget. As a consequence, they do not get an income to fulfill their needs. A lower income causes a reduction in consumption and leads to a lower standard of living. Thus, a rise in economic growth must be followed by an improvement in income distribution. A lower income disparity indicated that more people are involved in the manufacturing process. Therefore, they get an income and use their income to meet their needs.

II. LITERATURE REVIEW

The uneven income distribution is associated with heterogeneity in resource ownership and infrastructure. This condition causes inequality of per capita income between regions. Some regencies with resources abundant and excellent infrastructure have an advantage for developing modern sectors. The tertiary sectors have developed in Central Business Districts. Some regions have good infrastructure that allowed the developing a service sector. More, some regencies located nearby central business districts also have adequate infrastructure to support the developing manufacturing sector. There is a tendency that cities with adequate infrastructure have become new investment destinations. Therefore, these cities get a large amount of additional investment (Chakravorty, 2003). Investments tend to be concentrated in a few places (Lall et al., 2004), which are located close to markets or ports. A good infrastructure causes a reduction in production costs. The companies tend to build their factories in locations with adequate infrastructure so that they get a lower production cost and produce competitive products. Thus there is a close correlation between investment and location determination.

Conversely, some regions have no adequate infrastructure to support the development of the manufacturing and service sectors. Therefore, these regions make an effort to develop the agriculture sector. However, a bad term of trade of agriculture product makes the primary sector is not attractive. The low profit makes a community, especially young people, reluctant to enter the agriculture sector. A low added value also promotes a land-use change from agriculture land to non-agriculture activities. Nevertheless, these land-use change is not accompanied by the labor movement from the primary sector to secondary and tertiary sectors. As a consequence, the primary sector faces a problem of labor surplus. The agricultural land is narrowing while the number of agricultural labor remains unchanged. Therefore, the workers employed in the agriculture sector is more than the number of workers required. Labor productivity in agriculture sectors declines as an impact of land-use change.

Labor productivity is associated with wage rates. A decrease in labor productivity is followed by a decline in income. The income is essential to fulfilled consumer needs. Low income makes an inadequate fund for households to meet their needs. Therefore, households face a poverty problem. They cannot obtain proper nutrition and access to medical infrastructure. The malnutrition and poor access to medical infrastructure have an impact on the low level of health. The lower health is related to a lower life expectancy. Meanwhile, life expectancy is an element of the human development index. Lower life expectancy is associated with a lower score of the human development index. Generally, some regions specializing in agriculture are associated with a low Human Development Index (HDI).

Some researchers have analyzed the disparity in various aspects. Kim and Kim (2003) analyzed investment deployment in 6 (six) metropolitan di South Korea and showed that investment deployment was the best way to achieve high growth and reduce income disparity between regions. Conversely, the centralization of industrial activities in Seoul and Pusan boost income disparity. Meanwhile, Combes et al. (2008) showed that spatial wage disparity occurred as an effect of heterogeneity in skill labor between regions. The disparity in skill labor was an essential factor that determined wage disparity. Bukenya (2010) examined wage convergence in Alabama and showed

that there was no wage convergence. The wage rate in Alabama tended to diverge. Furthermore, the research of Royuela et al. (2014) indicated a negative association between growth rate and income disparity. The income disparity was increased as an impact of a higher growth rate.

The Central Java Province consists of 35 regencies/cities. Most of the regencies have advantages in the primary sector due to the vast agricultural land. Conversely, some municipalities have restricted areas, so the agriculture sector cannot develop in these zones. However, these cities have adequate infrastructure allowed for the development of the services sector. Meanwhile, some regencies situated nearby cities have an advantage in the manufacturing sector. The restricted area in the city as central business districts makes the plants to move to the suburban zone. Also, the suburban zone is supported by adequate infrastructure allowed for developing the manufacturing sector. Heterogeneity in the characteristic of regencies/cities causes income disparity in line with the difference in labor productivity between sectors, leading to disparity in the Human Development Index (HDI). Moreover, several studies are performed on HDI inequalities with contradictory findings. Konya and Guisan (2008) examined HDI convergence in Europe and revealed the existence of HDI convergence. Mayer-Foulkes (2010) analyzed β convergence and found that urbanization has a significant effect on the HDI convergence. A study related to HDI inequalities in the India area was performed by Benni and Chowdappa (2017). The result showed that there was an unequal distribution of HDI.

Furthermore, the population movement encourages an increase in the population of the nearest regency. Most of the newcomers have good skills in manufacturing and services activities. This situation supports developing in the manufacturing and service sectors. This development increase community income. The rising income promotes an increase in consumption. Also, an increase in income supports the community to obtain better access to education, medical service, and other services. Therefore, this study wants to explore and describe the disparity in the Human Development Index (HDI) in Central Java.

III. RESEARCH METHODOLOGY

This research used secondary data published by the Central Bureau of Statistics (BPS). The data includes the Human Development Index (HDI), mean years of schooling, and growth. Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development, such as long and healthy life, being knowledgeable, and having a decent living standard. Mean years of schooling is the average number of completed years of education of a country's population aged 25 years and older. Meanwhile, growth indicates an increase in the market value of the goods and services produced by an economy over time. The data cover publication for 2011-2019.

The Williamson index was used in this study. The Williamson index is a population-weighted coefficient of variation. The coefficient of variation measures the statistical dispersion ($0 < v < \infty$), based on variance and standard deviation. However, in this study, the Williamson Index was used to measure the inequality of the Human Development Index (HDI) between regencies/cities. This index describes how well resources were distributed among regencies/cities. The following equation modifies the calculation of the Williamson Index.

$$CV = \frac{\sqrt{\sum_{i=1}^n (y_i - y)^2 \left(\frac{f_i}{n}\right)}}{y}$$

Respectively, CV is the Williamson Index, Y_i is the score of HDI in the region I, y is the score of HDI in the province, f_i is the population of the region I, and n is the population of the province.

Furthermore, the Williamson index's analysis was supplemented by Klassen Typology to identify the pattern and economic structure of each regency/city. Based on Klassen Typology, this research analyzes the potential of each region to achieve a higher score in the Human Development Index (HDI)

IV. FINDING AND DISCUSSION

There was a low disparity in the Human Development Index (HDI) in Central Java. The Williamson Index was lower than 0.03 indicated that the human development Index is relatively equal between regions. Coefficient variation of human development index decline over time. The score of HDI in 2001 was 0.253, and this score reduces along the research period. In 2019, the score of HDI was 0.234 indicated that HDI value is getting even distributed. This situation showed that the province and local government success in reducing inequality of HDI (Figure 1).

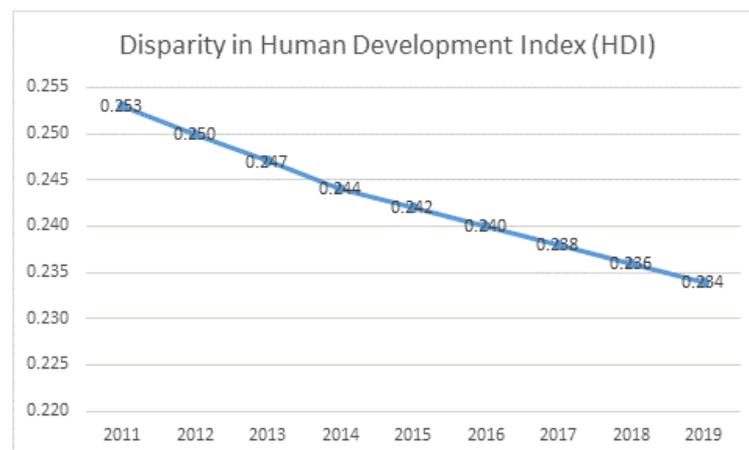


Figure 1.
The disparity in Human Development Index (HDI) Between Region in Central Java

Furthermore, based on Typology Klassen, it was identified that several regions have a high economic growth score, although their score in HDI remains low. These regions involved Purbalingga, Banjarnegara, Kebumen, Magelang, Blora, Rembang, Pati, Jepara, Batang Pekalongan, Pemalang, Tegal, and Brebes Regencies. The higher growth indicated higher labor productivity, so the citizens get higher income. The high income allowed the community to raise their expenditure. A rise in expenditure promotes an increase in HDI value. Thus, there was a potential economy to raise the HDI value, so these regions catch up with the prosperous regions. These HDI values rise faster than in developed regions. Therefore, there was a tendency a decline in HDI variation leads to a decrease in the disparity in HDI value (Table 1).

Meanwhile, several regions achieve both high economic growth and high HDI value. The high growth and HDI value occurred in Banyumas, Boyolali, Klaten, Sukoharjo, Karanganyar, Sragen,

Semarang, and Kendal Regencies, and some municipality involved Magelang, Surakarta, Salatiga, Semarang, Pekalongan, and Tegal. Based on geographical location, these regencies were situated close to central business districts. Several regencies such as Boyolali, Klaten, Sukoharjo, Karanganyar, and Sragen, are part of Ex-Karesidenan Surakarta with Solo City as the Central Business District. More, Kendal and Semarang regencies are situated close to the Semarang Municipality and part of Semarang Agglomeration. Like a municipality, these regencies also have adequate infrastructure to support economic growth. The excellent infrastructure promotes a high level of health and education. Thus, these regions enjoy a high HDI value and growth as well.

The phenomena of high HDI value and low growth rate occurred in Kudus Regency. This region has an advantage, especially in the cigarette industry. Most of the labor force works in the cigarette industry. The community enjoys economic welfare that manifested in a high standard of living. High standard living boost HDI value. However, changes in people’s views on healthy living restrict the consumption of cigarettes. The number of cigarette company reduce so that today there are only 57 companies. A decline in cigarette demand leads to a decrease in cigarette production as well. This situation restricts the economic growth of the Kudus Regency.

Furthermore, there were several regions with low HDI value and economic growth. These regions include Cilacap, Purworejo, Wonosobo, Wonogiri, Grobogan, Temanggung, and Demak Regencies. In these regions, the economy is dominated by the agriculture sector. Therefore, most of the population work as a farmer. They faced a problem due to the low in terms of trade for agriculture products. More, this problem was compounded by a labor surplus problem in the agriculture sector. An increase in population numbers causes a labor surplus problem in this sector. The ratio of land area to labor decline as an impact of a rise in population number. Limited areas of agriculture restrict a rise in value-added and economic growth. This problem has an impact on the low productivity of labor. More, a low income follows the low in labor productivity. The income of farmers did not seem enough to fulfill their needs. Therefore, their level of consumption not enough to achieve a high standard of living. Due to the low income, the farmer cannot get a high education level and good medical service. As a consequence, the community cannot achieve a high HDI value. Thus, in these regions, a low HDI value was accompanied by a low growth rate. Nonetheless, this problem just occurred in 7 (seven) regencies, whereas the other regions obtain either a high HDI value or growth rate.

Table 1. Klassen Typology

HDI	<ul style="list-style-type: none"> • Kudus 	<ul style="list-style-type: none"> • Banyumas • Boyolali • Klaten • Sukoharjo • Karanganyar • Sragen • Semarang • Kendal • Kota Magelang • kota Surakarta • Kota Salatiga • Kota Semarang • Kota Pekalongan • Kota Tegal
-----	---	--

<ul style="list-style-type: none">• Cilacap• Purworejo• Wonosobo• Wonogiri• Grobogan• Demak• Temanggung	<ul style="list-style-type: none">• Purbalingga• Banjarnegara• Kebumen• Magelang• Blora• Rembang• Pati• Jepara• Batang• Pekalongan• Pemalang• Tegal• Brebes
---	---

The results showed that even though they have low HDI value; however, several regions showed an increase in growth rate allowed to boost a rise in HDI value. Meanwhile, some regions indicated a high value in HDI and growth rate as well. More, one region achieved a high score in HDI but low in growth rate. However, only 7 (seven) regions stayed in condition, both low in HDI and growth rate. Therefore, that disparity in HDI in Central Java tends to decline. It means that the coefficient of variation in HDI is reduced over time.

V. CONCLUSION AND FURTHER RESEARCH

The coefficient of variation in HDI declines over time so that the disparity in HDI in Central Java tends to decrease. Several regions achieved a high growth rate, although their score in HDI relatively low. A high growth rate encouraged a rise in expenditure and allowed a rise in education level. Also, a rise in income promotes the community to obtain better medical services. Then, better medical service supports an increase in life expectancy. Therefore, a rise in expenditure, educational level, and life expectancy boosts the HDI value in several regions, leading to a decline in HDI value disparity. Kindly, the local government supports an increase in income by developing a program that concentrated on each region's comparative advantage. The local government can simplify an industrial regulation to encourage an increase in labor productivity and value-added. An increase in value-added promotes a rise in growth rate, leading to a decline in HDI value disparity between regions. This research has not explored yet some factors that determine the score of HDI. This is a limitation of this research. Therefore, the next research can analyze some factors that determine the score of HDI and examine the possibility of HDI convergence in Central Java.

REFERENCES

- Beker Victor A. (2016). Growth, Inequality And Poverty: What Do We Know?, Working Paper in SSRN Electronic Journal
- Benni, B.S, and Chowdappa, V.A. (2017). Disparities in Human Development of Hyderabad Karnataka Region. IOSR Journal of Humanities and Social Science, 22(7): 64-68.

- Bukenya, James O., Cedric Davis, Swagata Banerjee and Buddhi Gyawali (2011) "Analysis of regional disparities and wage convergence in Alabama," *African Journal of Agricultural Research* Vol. 6(2): 363-375.
- Chakravorty, S. (2003). "Capital source and the location of industrial investment: A tale of divergence from post-reform India." *Journal of International Development*, Vol. 15(3): 365-383
- Combes, Pierre-Philippe, Duranton, Gilles, and Gobillon, Laurent (2008), "Spatial Wage Disparities: Sorting Matters!," *Journal of Urban Economics*, 63: 723-742
- Kim, Euijune, and Kabsung Kim (2003). "Impacts of the development of large cities on economic growth and income distribution in Korea: A multiregional CGE model," *Papers Reg. Sci.* 82: 101–122
- Konya, L., and Guisan, M.C. (2008). What Does The Human Development Index Tell Us About Convergence? *Applied Econometrics and International Development*, 8(1): 22-32.
- Lall, S., Z. Shalizi, and U. Deichmann (2004). "Agglomeration economies and productivity in Indian Industry," *Journal of Development Economics* 73.
- Mayer-Foulkes, D. (2010). Divergences and convergences in human development. UNDP Human Development Research Paper 2010/20.
- Peterson, Wesley F, (2017). Is Economic Inequality Really a Problem? A Review of the Arguments *Soc. Sci.*, 6 (147): 1- 25.
- Royuela, V., P. Veneri and R. Ramos (2014), "Income Inequality, Urban Size and Economic Growth in OECD Regions," *OECD Regional Development Working Papers*, 2014/10, OECD Publishing.
- Sinding, S.W. (2009), *Population, Poverty and Economic Development*, *Phil. Trans. R. Soc. B.* 364: 3023-3030.