

Mapping the Inclusiveness of Regional Economic Growth in Indonesia in 2015 – 2020

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Abstract- This study aims to analyze the mapping of the impact of digitalization on regional inclusive growth in Indonesia. This study uses secondary data sources from 2015 - 2020 and 34 provinces in Indonesia. The IPI variable measured by the McKinley method consists of economic growth obtained through formulating the provincial real GRDP for the 2010 base year. Poverty is explained by the percentage of the province's poor population. Inequality is measured by the gini ratio, which describes the level of income inequality at the provincial level. Unemployment is explained through the open unemployment rate, namely the percentage of the population 15 years and over who was unemployed during the past week. The results of the analytical method show that the conditions for inclusive growth rates and the availability of information and communication technology infrastructure in Indonesia vary between provinces. And the Williamson index shows that regional disparities in Indonesia for the 2015 -2020 period fluctuated by 0.71.

Keywords- Inclusive Growth Index, Economic Digitalization, Regional Disparities.

I. INTRODUCTION

Indonesia is one of the developing countries which have yet to finish experiencing development problems to achieve inclusive growth. Although in the last few decades, Indonesia's economic growth has increased. To achieve inclusive growth, overall development is needed. Therefore, information and communication technology (ICT) is essential in developing a country through sustainable economic growth and competitiveness. The result of ICT in the field of trade has become the focus of industrial leaders, entrepreneurs, traders and others. Economic development is the goal of national development carried out by the government, mainly focusing on improving people's welfare.

Development is defined as a multidimensional process within a society to move toward a state of well-being both materially and non-materially (Todaro & Smith, 2006). Economic growth is one of the benchmarks for the success of development in a region or country (Wihastuti, 2008). Currently, the concept of development assessment is undergoing adjustments. Development is no longer assessed based solely on economic growth but also on the distribution of growth outcomes. This is reflected in increased employment, reduced unemployment rates, poverty levels, and inequality (both income and non-income).

The concept of development assessment that combines aspects of economic growth and the distribution of growth results is known as inclusive growth. According to (OECD, 2013), inclusive growth is economic growth that can

increase and create economic opportunities. It guarantees that income and non-income welfare increases are evenly distributed throughout all levels of society. In general, this understanding is close to the concept of development presented by Todaro and Smith. Inclusive growth is included in one of the Sustainable Development Goals (SDGs) goals. The eighth goal of the SDGs to be achieved is to increase inclusive and sustainable economic growth, accompanied by the creation of full and productive employment and decent work for all levels of society.

Over time, it was realized that high economic growth would only sometimes overcome socioeconomic problems such as unemployment, poverty, and unequal income distribution. So the idea of social justice is needed in the economic development of each region (Tiwari et al., 2013). This reinforces the belief that economic growth is a necessary condition (necessary) but not sufficient (sufficient) for the development process (Ahmed & Wahid, 2011).

Therefore, the concept of human development emerged. Three options are considered the most critical, namely longevity and health (longevity), education/knowledge (knowledge), and access to resources that can meet living standards (living standards). The rapid development of digital technology worldwide has brought many countries, including Indonesia, into the era of the industrial revolution 4.0. Entering the industrial revolution 4.0, digital technology is one of the main assets in various sectors, especially in the business sector.

Industrial development is inseparable from technological developments, which positively impact a country; one of the impacts of technological developments is increasing a country's economic growth.

With digital technology, a country can push its economy towards a digital economy (Van Ark et al. 2016). In Indonesia, the digital economy has been implemented. Currently, the government is intensively developing a digital-based economy. The majority in various countries compete to improve and implement innovative development strategies. Innovative development one way to do this is by implementing the digital economy.

The digital economy is part of the financial products originating from digital technology with business models based on digital products or services (Bukht & Heeks, 2018). The digital economy focuses on buying and selling transactions and markets via the Internet world. Indonesia is estimated to have a relatively high digital economy market development potential compared to neighbouring countries (Bachtiar et al., 2020).

Electronic commerce can be utilized to support a country's economic growth. This aligns with the opinion (Zhang & Cao 2018) that "E-commerce has not only increased social welfare but also stimulated economic growth". This shows one of the reasons that e-commerce is essential for a country to develop. A country's economic growth is significant because economic growth is one of the supports for people's prosperity. With the increasing prosperity of the people, it is hoped that it can support the progress of a country.

The forecast results show that the trend of e-commerce users in Indonesia has increased in recent years. The trend of e-commerce users in Indonesia is predicted to continue to grow in the next few years. This statement is supported by the results of the SEA economy report (Google & Temasek Holding, 2018). Indonesia's digital economy sector, primarily e-commerce, is the highest in Southeast Asia, and its growth will increase four times by 2025. E-commerce has an essential role in Indonesia's economy, from business people and consumers to the government. It is hoped that people's welfare can continue to increase with the development of digital technology.

The increasing intensity of e-commerce has an impact on increasing regional economic added value, which is reflected in the value of the Gross Domestic Product (GDP) because the intensity of the economic activity will be directly proportional to the economic value in a region (Angel Galindo et al., 2009). Research results state that digital transformation is currently the most important phenomenon in the scientific and business environment that reflects changes in society and the economy due to the development of digital technology (Groznykh et al., 2019). Because digital transformation has an important role,

namely as a driving factor for sustainable economic growth, to ensure a solid competitive position in the global space (Zolochevskaya et al., 2019). To achieve inclusive growth, overall development is needed. Therefore information and communication technology (ICT) plays an essential role in developing a country through sustainable economic growth and competitiveness.

II. LITERATURE REVIEW

The concept of inclusive growth is an exciting study; following is a summary of several definitions of inclusive growth from various researchers and international organizations. (Ali and Son 2007) define the concept of inclusive growth by using the concept of social opportunity functions such as opportunities for access to health and education. Growth is said to be inclusive if it can increase the function of social opportunities. The occurrence of equity is reflected by increasing social opportunities. Improvement depends on two factors: the average opportunities available to the community and how opportunities are distributed to the community.

The Organization for Economic Co-operation and Development (OECD, 2013) identified eleven income and non-income dimensions necessary for inclusive growth: income and well-being, employment, skills and education, health, social connections, environmental quality, and security. Inclusive growth refers to economic growth that can increase and create economic opportunities and ensures that income and non-income welfare increases are evenly distributed throughout society.

McKinley (2010) measures inclusive growth using concepts from the Asian Development Bank (ADB). The approach method used is to compile a composite index of inclusive growth, and its measurement uses four main assessment dimensions: economic growth, productive workforce, access to economic facilities, and income. Poverty, inequality and equality. Human capabilities and social protection. Each assessment dimension has several indicators; all indicators used will be transformed into values on a scale of 0-10 using the min-max normalization method.

The index results will describe the level of achievement of inclusive growth with a value range of 0-10. The research divides the value of the inclusive growth index (IPI) into two categories. The first category is the middle to lower inclusive growth rate with a $0 < IPI \leq 5$ value. The second category is the middle to high inclusive growth group with a value of $5 < IPI \leq 10$.

III. RESEARCH METHODOLOGY

This study uses secondary data from cross-section data covering 34 provinces in Indonesia and time series data from 2015-2020. The secondary data will be obtained from

publications published by the Central Bureau of Statistics (BPS). This research was conducted to analyze the mapping of inclusive growth in Indonesia.

Economic growth is obtained by formulating the province's real GDP for the 2010 base year. Poverty is explained by the percentage of the province's poor population. Inequality is measured by the Gini ratio, which describes the level of income inequality at the provincial level. Unemployment is explained through the open unemployment rate, namely the percentage of the population 15 years and over who was unemployed during the past week. At the same time, digitalization is explained through the information and communication technology development index (IP-TIK).

IV. RESULT AND DISCUSSIONS

1. Overview of Inclusive Province Growth Rates in Indonesia:

In measuring the inclusive growth index, the value is between 0-10; if grouped based on the median value, regions with an inclusive growth rate of the upper middle $5 < IPI \leq 10$ and lower middle $0 < IPI \leq 5$ will be obtained. This grouping will be used as a proxy for the level of development province. Economic growth is called inclusive if growth can reduce poverty, reduce inequality and absorb labour. In general, there has been an increase in inclusive growth outcomes for provinces in Indonesia between 2015 and 2020 (Figure 1). In 2015, only five provinces were in the middle to upper inclusive growth rate category. This number has increased dramatically to 26 provinces in 2020. Most provincial IPI values that fall into the middle to the upper category are only slightly above the median threshold, so appropriate policies are still needed to encourage more inclusive growth.

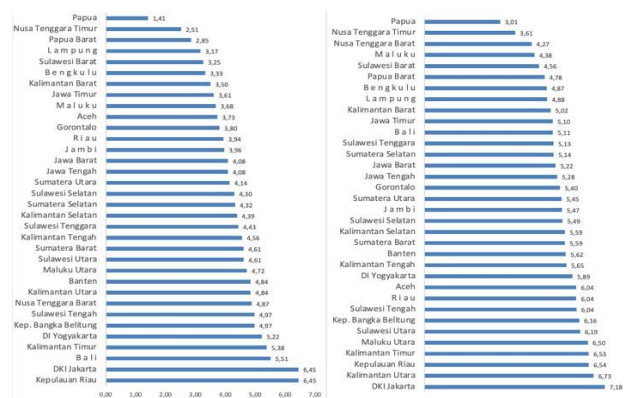


Fig 1. The sequence of Provincial IPI Scores in Indonesia in 2015 and 2020.
Source: Central Bureau of Statistics 2020 (Processed)

The province with the lowest inclusive growth rate for 2015 and 2020 has stayed the same, namely Papua Province. Even though Papua Province has the lowest inclusive growth rate, Papua Province has enormous

capital and assets, natural resources, strategic geographical location and demographic structure of the population. This shows that Papua Province has the potential to catch up with other provinces if it can formulate policies to continue to maintain and accelerate positive trends in increasing inclusive growth.

When compared to the provincial per capita income level, the inclusive growth rate sometimes does not show the same thing. High inclusive growth rates do not always follow provinces with high per capita income. Table 2 compares each province's average IPI ranking and GRDP per capita during 2015 - 2020. Provinces with an IPI rating lower than the GRDP per capita rating indicate that the benefits of their economic growth have not been spread evenly. On the other hand, a province with an IPI rating much higher than its per capita income rating indicates that its economic growth has been quite good.

Table 2. Comparison of the Average IPI Value and GRDP Per Capita of Provinces in Indonesia 2015 – 2020.

Provinsi	IPI	PDRB Per kapita (Juta Rupiah)	Peringkat IPI	Peringkat PDRB Per kapita
ACEH	5,12	123459,30	18	18
SUMUT	5,15	496380,90	16	5
SUMBAR	5,31	158409,43	12	13
RIAU	4,98	474400,13	21	6
JAMBI	4,78	138750,36	24	16
SUMSEL	5,06	288591,89	20	10
BENGKULU	4,17	42844,01	30	30
LAMPUNG	4,24	224465,77	29	11
KEP. BABEL	5,81	50440,83	7	29
KEP. RIAU	6,66	169066,95	2	12
DKI	7,45	1665615,36	1	1
JAKARTA				
JABAR	5,15	1365079,71	17	3
JATENG	5,06	907908,02	19	4
DIY	5,98	94608,92	6	21
JATIM	4,69	1507347,41	25	2
BANTEN	5,71	416315,17	9	8
BALI	6,03	145940,63	5	14
NTB	3,61	92663,49	32	22
NTT	3,22	63883,67	33	26
KALBAR	4,45	126233,67	26	17
KALTENG	5,23	91030,88	13	23
KALSEL	5,18	123443,17	14	19
KALTIM	6,08	459365,76	4	7
KALUT	6,26	55756,85	3	28
SULUT	5,75	81009,90	8	25
SULTENG	5,48	108486,70	10	20
SULSEL	5,16	296139,27	15	9
SULTRA	4,91	84925,15	22	24
GORONTALO	4,84	25706,77	23	33
SULBAR	4,34	29797,36	28	31
MALUKU	4,43	28371,56	27	32
MALUT	5,47	24133,36	11	34
PAPUA	4,01	58018,32	31	27
BARAT				
PAPUA	2,28	142236,64	34	15

According to the average inclusive growth index and per capita GRDP results, provinces such as the Bangka Belitung Islands and North Sulawesi, although their average per capita income is low in inclusive growth rates,

are in the top 10 ranking categories. Meanwhile, several provinces ranked in the top 10 in annual per capita income, such as DKI Jakarta, Banten and East Kalimantan, have been balanced with consistent inclusive growth.

The inclusive growth index can be used to monitor the level of inclusiveness of regional development. Regions still in the middle to lower category need more priority regarding development policies. For the formulation of inclusive economic development policies to be more precise, it is necessary to look at each assessment component. This is done as a basis for determining development policy priorities based on each province's conditions and needs.

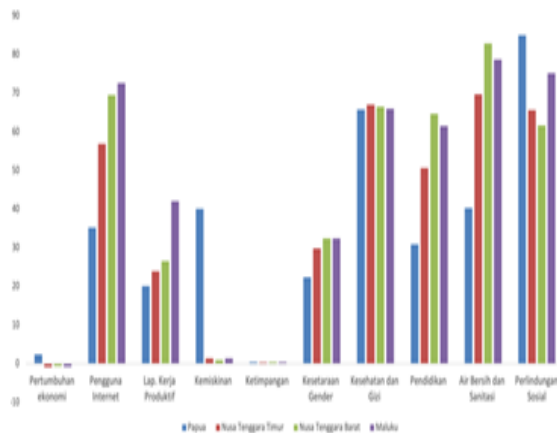


Fig 2. Component Index of Inclusive Growth in 4 Provinces with the Lowest Average of Inclusive Growth
Source: Central Bureau of Statistics 2020 (Processed)

Economic growth, productive employment, poverty and inequality are still the main problems in the four provinces with the lowest inclusive growth rates. For these four components, the value is still below the middle value of the index (lower middle). Therefore, to increase the inclusiveness of development, policies are needed that encourage the increase of these components in areas that must be made a priority.

The inclusiveness of economic growth in terms of education and technology (internet users) in the Provinces of West Nusa Tenggara and Maluku is quite good. However, this is becoming less because the two provinces' average poverty and inequality rates still need to be lowered. This condition describes equality in terms of poverty. In East Nusa Tenggara Province, almost all components of inclusive growth are still at the lower middle level; even for Papua Province, the value is the lowest compared to other provinces. Only the social protection component has a good enough score. This condition makes development in Papua Islands must receive special attention from the central and regional governments. Appropriate infrastructure development is expected to improve conditions for inclusive economic growth in Papua Province.

2. Regional Disparities between Provinces in Indonesia:

Disparities between regions are natural at the beginning of the new development process, especially for developing regions. The heterogeneity and diversity of characteristics between regions cause a tendency for inequality between regions. The size of the disparity between areas provides an overview of the region's condition and progress of development. Differences (inequality) between provinces in Indonesia in 2015-2020 were analyzed using the Williamson Index. 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 inequality in economic development, and if the Williamson Index is closer to 1, the wider the disparity in economic development.



Fig 3. The trend of Williamson Coefficient of Variation Between Provinces in Indonesia.
Source: Central Bureau of Statistics 2020 (Processed)

Based on the Williamson Index (IW) analysis results, from 2015 to 2020, the level of disparity between provinces in Indonesia has an average of 0.71. This value indicates an imbalance in economic development between regions in Indonesia. According to Tambunan (2003), the criteria for assessing the Williamson Index are as follows; If the value is 0 to 0.5, the level of inequality between regions is low, but if the value of the Williamson Index is 0.5 to 1, then the level of inequality in regional development is high. Therefore, based on these criteria, the rate of inequality in economic development between provinces in Indonesia is relatively high.

These results also show that differences in GRDP per capita cause the effect of high disparities between regions. High and low regional inequality is caused by several things, for example, policies on increasing economic growth in a region that is running well but is not in line with policies implemented by other regions so that regions that have successful policies can grow faster than areas that have policies. Less effective in increasing economic growth. And vice versa if there is a decrease in regional disparities due to the fact that economic development policies in each province in Indonesia are running well and

can go hand in hand with efforts to increase economic growth to improve people's welfare.

This gap is caused by differences in the content of natural resources and differences in demographic conditions found in each region. As a result of this difference, the ability of a part to encourage the development process is also different. The occurrence of gaps or disparities between regions has implications for the welfare of people between regions. Alesina and Rodric (1994) argue that unequal income distribution will negatively affect economic growth, and then the welfare of the people of a region will also decrease.

Differences in the characteristics of the abundance of natural resources are one of the causes of disparities between regions, which, if left unchecked, can lead to socio-political problems.

V. CONCLUSION

The study results show that the conditions for inclusive growth rates and the availability of information and communication technology infrastructure in Indonesia vary between provinces but have generally increased during the 2015 - 2020 period.

Provinces with middle to upper inclusive growth rates tend to have higher availability of information and communication technology when compared to provinces with lower middle inclusive growth rates. Disparities in regional development still occur between provinces in Indonesia. The Williamson Index value shows that regional disparities in Indonesia fluctuate and are pretty high. The average Williamson Index value from 2015 - 2020 is 0.71.

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