Determinants of Inclusive Economic Development: A Fixed Effect Model Approach

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Abstract
The implementation of development in Indonesia faces challenges and obstacles along with the dynamics of community life and changes in the global constellation. The economic development model that has been applied only encourages economic growth, resulting in social exclusion in the form of poverty, unemployment and social inequality. This study aims to estimate the factors that influence inclusive economic development in Indonesia. The data used comes from 34 provinces in the period 2015-2022. This research contributes to economic development in the form of inclusive economic development, the use of IEDI as a value that shows the level of inclusiveness of Indonesia's development, and contributes to the determinants of IEDI. The model used is FEM with the results showing that the variable open unemployment rate has a negative and significant effect. The rate of GRDP, and HDI has a positive and significant effect on inclusive economic development. The number of poor people insignificant effect. This is based on the trickle-down effect theory which explains that the progress obtained by a group of people automatically trickles down so that it will create jobs. In the end, it will foster an equitable distribution of the results of economic growth. Since economic growth is an indicator of economic development, such changes will affect the number of poor people in the long run.

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Introduction
The implementation of development in Indonesia faces challenges and obstacles along with the dynamics of community life and changes in the global constellation. The development indicators used
are still mono-dimensional such as the level of education, health, and community income has shown changes (Suharto, Rochaida, Roy, & Setini, 2020). However, multi-dimensional development issues such as high levels of unemployment, poverty, and disparities in rural and urban areas have not been overcome (Nurlanova, Satyabaldin, Brimbetova, & Kireyeva, 2019).

Warsilah (2015), The economic-minded development model that has been applied has actually caused protests, namely that the development process only encourages economic growth, resulting in social exclusion in the form of poverty, unemployment and social inequality. The term social exclusion was used by Rene Lenoir (Lenoir, 1974) to refer to people marginalized from the mainstream of society. The concept refers to a multi-dimensional process with various forms of exclusion combined, participation in decision-making and political processes, access to employment and material resources, and integration into general cultural processes. When combined, this creates acute forms of exclusion that find spatial manifestations in specific environments (Warsilah, 2016). Thus, the dominant model of economic development in most countries in the world has led to economic and social inequality, deepening absolute poverty, and no improvement in the welfare of the population (Zhukovska & Dluhopolskyi, 2021)

Inclusive economic development can be interpreted as a process to ensure that all marginalized groups can be fully involved in the development process with the main focus of inclusive development being on the distribution of facilities (health, education, and infrastructure), entitlements in the form of political participation, as well as involvement in maintaining reproducible provision for the community (Maryam & Irwan, 2022; Silver, 2019; Gupta, Pouw, & Ros-Tonen, 2015). The goal of inclusive development is to reduce poverty, inequality and discrimination, which is in line with the Sustainable Development Goals in goal 8, namely increasing inclusive and sustainable economic growth (Kozhyna, 2022), full and productive employment opportunities, and decent work (Kannan, 2022). However, this goal has not been reflected in Indonesia, which has experienced significant economic development problems in the past decade (Siburian, 2020). This is demonstrated by the much higher poverty rate in Eastern Indonesia. The commitment to eradicate poverty is translated into poverty alleviation programs and policies (Warburton, 2018).

Based on The Inclusive Development Index (IDI) 2018, Indonesia is included in developing economies along with 74 other countries with an IDI score of 3.95. Performance on the three pillars that make up the index is in stark contrast, as Indonesia ranks 61st on the inclusion pillar, despite a remarkable decline in poverty since 2012. Likewise, income inequality is comparatively almost as severe as the inclusion pillar, ranking 62nd with a score of 84 on a scale of 0-100. Meanwhile, on the
intergenerational equity and sustainability index dimension, Indonesia recorded a more positive performance thanks to its low level of public debt and dependency ratio (World Economic Forum, 2018). The trend of Indonesia’s interpersonal relationship level is still at the 40-45 level from a score between 0-100 or in the emerging and developing category in the Asian region.

![Graph showing Indonesia's inclusive development performance](image)


Fig. 1. Indonesia Inclusive Development Performance

Inclusive economic development in Indonesia is characterized by the Inclusive Economic Development Index (IEDI) which is used to measure and monitor the extent to which the level of inclusiveness of Indonesia’s development at the national, provincial, and even district/city levels (Daryono, 2021). Nationally, the inclusive economic development index showed satisfactory results during the 2015-2022 period with an average score of 5.77. DKI Jakarta has a score of more than 6 and the low scores are for Papua, West Papua, and East Nusa Tenggara provinces with scores between 4-5.5 (BAPPENAS, 2023).

The research on inclusive economic development is important because it provides insights into the factors that influence economic growth and development in a way that benefits all members of society. Understanding the determinants of inclusive economic development can help policymakers and stakeholders design and implement more effective strategies to reduce poverty, inequality, and
social exclusion. The novelty in this research is to estimate inclusive economic development using the inclusive economic development index against the factors that influence it. Additionally, research in this area can contribute to the development of policies and programs that promote sustainable and equitable economic growth, leading to improved living standards and overall well-being for the population. By examining the impact of various factors on inclusive economic development, researchers can also identify areas for targeted intervention and investment, ultimately contributing to more balanced and resilient economic systems.

In Indonesia, there have been several studies on inclusive economic development, but they tend to only discuss the pillars of economic growth and development such as Warsilah (2015), Sholihah (2014), Cahyadi, Sasongko, & Saputra (2018), Kusumaningrum & Yuhan (2019), Pratiwi (2022), Faizin & Prabowo (2022), Afriliana & Wahyudi (2022), and Rini & Tambunan (2021). Meanwhile, research related to inclusive economic development and the factors that influence it is still rare. The few studies that discuss inclusive economic development have been conducted by Shaleh (2021), Dörfel & Schuhmann (2022), Farifah & Pramesti (2022), and Suharto, Rochaida, Roy, & Permana (2021). Therefore, this study aims to discuss inclusive economic development using the index value and the factors that influence it, as well as the policy implications of the government’s efforts to accelerate inclusive economic development in Indonesia.

**Literature Review**

Economic development reflects the ability of the national economy which is initially relatively static over a period of time that lasts long enough (Arsyad, 2010). Adam Smith (1776) explained that economic development is a combined process between population growth and technological progress. Meanwhile, Sukirno (1996) states that economic development is a process to increase the income or per capita income of a country by processing economic potential into real. Then, economic development according to Todaro (2006) is an effort to achieve a sustainable growth rate of per capita income so that the country can multiply output faster than the rate of population growth.

According to Kim Eric Bettcher (2015), an inclusive economy refers to equal opportunities for every member of society to access opportunities to engage and participate in the economic activities of a country. Ianchovichina & Gable (2009) state that an inclusive economy refers to equal opportunities for all people to participate in the economic life of the country as employees, entrepreneurs, consumers, and communities. This applies to all individuals with various backgrounds and income strata, who must be given the opportunity to participate in the economy
and benefit from their participation. Thus, inclusion has as its basis the need for unbiased access to markets, resources, opportunities.

Keynes's General Theory explains that the errors that occur in society related to the economy in the form of failure to provide full employment and distribution of wealth and income. This leads to inequality and other relationships with economic growth (Alekhina & Ganelli, 2021). The relationship between inequality and economic growth can be explained through the concept of inclusive economic development (Graves, Mattingly, & Wail, 2023), which is a development paradigm that not only pursues economic growth but also ensures that economic growth can be enjoyed by all levels of society (Arrfah & Syafri, 2022).

According to Ali & Zhuang (2007), Ali I. (2007) and Ali & Son (2007) inclusive economic development clearly includes inclusion and economic development and views inclusion as both a process and a goal. Inclusive economic development emerges from inclusive growth by highlighting the hallmarks of inclusive growth, namely economic growth that is non-discriminatory and reduces disadvantage (Klasen, 2010). Cabeza-García, Esther, & Oscanoa-Victorio (2018), state that inclusive economic development is an effort to develop the capacity to advance a country's economic growth with the contribution of all citizens without exception for every group in society (Krysovatyy, Zvarych, Brodovska, Shevchenko, & Krasnorutskyy, 2023). Meanwhile, Johnstone (2022) explains that inclusive economic development can be explained through inclusivity by identifying universality, plurality, sociality, and relationality in the form of inclusion (Kyryziuk, 2020).

BAPPENAS (2018) argues that inclusive economic development is economic development that creates broad access and opportunities for all people with the principle of justice, improves welfare, and reduces pleasure between groups and regions. The Inclusive Economic Development Index (IEDI) can be interpreted as a tool used to measure the level of inclusive development in Indonesia at the district/city, provincial, and national levels. IPEI is formed of 3 pillars with 8 sub-pillars and 21 indicators. The first pillar is related to economic growth and development with sub-pillars namely economic growth (3 indicators), employment opportunities (3 indicators), and economic infrastructure (3 indicators). The second pillar is income equality and poverty reduction with sub-pillars including inequality (3 indicators) and poverty (2 indicators). expanding access and opportunity is the third pillar with sub-pillars including human capabilities (3 indicators), basic infrastructure (2 indicators), and inclusive finance (2 indicators).

According to Sadono Sukirno (1994), Kaufman & Hotchkiss (1999) and Mankiw (2000), unemployment can be defined as a person who has been classified in the labor force, who is actively
seeking work for a certain wage level but does not obtain the desired job. An unemployed person can be defined as a person who has not worked actively for the previous 4 weeks, is waiting for a call back for a job after being laid off, or is waiting to report for a new job within 4 weeks (Dharmakusuma, 1998). The Central Bureau of Statistics (2023) states that the open unemployment rate is a measure that shows the percentage of job seekers to the total labor force.

According to Tarigan (2005), Gross Regional Domestic Product (GRDP) is the sum of gross value-added arising from all sectors of the economy in a region. Then, the Central Bureau of Statistics (BPS) states that GRDP is the gross added result of all goods and services produced in the domestic area according to the country arising from economic activity in a certain period regardless of the factors of production owned (Badan Pusat Statistik, 2023). GRDP is the focus of traditional development approaches in a province, district, or city (Mudrajad, 1997). According to Arsyad (1999), this is characterized by a change in the number of GRDP regardless of whether the increase is greater or smaller than the population growth rate or changes in economic structure. The rate of economic growth is interpreted as a macroeconomic indicator that illustrates the level of successful development of a region in a certain period of time (Kurniawan & A’yun, 2022). The calculation of the economic growth rate is based on GRDP at constant prices.

Human development consists of three main concepts, namely based on individual aspects (Rastogi, 2002), knowledge and skills possessed (Alan, Yochanan, & Josse, 2008), and being a fundamental source of economic productivity (Frankel & Frankel, 1999). Human development can be realized in two ways: humans are used as labor based on their quantity. This means that the greater the number of people will increase labor productivity. The second way is through investment to get better human quality (Suripto, Firmansyah, & Sugiyanto, 2020). This method is in line with Todaro’s (2006) statement, which can be achieved through education and health. This means that the higher education one has is directly proportional to his skills as well as increasing his health-related awareness.

The United Nations Development Program (UNDP) introduced the Human Development Index (HDI) as a tool to measure human development based on a comparison between life expectancy, literacy, education, and living standards that can be applied worldwide (UNDP, 1997). The HDI value shows how far a particular country or region has achieved the specified targets. The targets in question are life expectancy of 85 years, basic education that can be felt by all people, and the level of
expenditure and consumption as a decent standard of living. The closer the number to 100, the higher the HDI of a region or country.

Poverty is motivated by economic (Psacharopoulos & Nguyen, 1997), social (McClelland, 1971), and cultural (Hiltman, 1978) factors. The condition of people who are classified as poor can be known based on the ability of their income to meet the standard of living (Nugroho, 1995). If the income earned is much lower than the average income so that opportunities and welfare are low, it can be called a poor community (Suryawati, 2004). The poor can be measured by the poverty line, which is an income of $2.15 per person per day as a purchasing power standard that includes food and non-food groups (World Bank, 2022).

Poverty measurement in Indonesia is based on the concept of the basic needs approach, which refers to the minimum basic requirements for the fulfillment of decent living needs using the Poverty Line (BPS, 2023). The poverty line shows the amount of rupiah value for expenditure during a month which consists of food and non-food poverty lines. Thus, the population is categorized as poor when the average expenditure per capita per month is below the poverty line. Meanwhile, the number of poor people is the accumulation of individuals who are below the poverty line.

Method

This study uses secondary data sourced from The Ministry of National Development Planning (BAPPENAS) for inclusive economic development index data. Meanwhile, data sourced from The Central Statistics Agency (BPS) for data on the open unemployment rate, GRDP rate, HDI, and the number of poor people. The time period used is from 2015-2022 in 34 provinces in Indonesia which is adjusted to the availability of data on the inclusive economic development index. The advantage of using panel data estimation is suitable for describing the dynamics of change (A'yun and Khasanah, 2022).

Hypothesis testing is carried out using regression analysis with the GLS (Generalizes Least Squares) method which produces linear and unbiased estimates (Gujarati, 1995). The regression model serves to examine the relationship or influence of two or more independent variables on the dependent variable (Gujarati & Porter, Basic Econometrics, 2008). The analysis was conducted using descriptive quantitative to explain the relationship of the inclusive economic development index as the dependent variable on the open unemployment rate, GRDP rate, HDI, and the number of poor people. The regression equation in this study is as follows:
The equation provides information that the inclusive economic development index is a proxy for inclusive economic development, constant, regression coefficient, open unemployment rate (%), number of poor people (people), GRDP rate (%), and HDI (%). Meanwhile, it is a proxy for the observation location (34 provinces), t for the time period (2015-2022), and e for standard errors.

Theoretically, the advantage of using panel data is that the greater the number of observations will provide positive population parameter estimates and increase degrees of freedom, as well as reduce the possibility of collinearity between independent variables. In the linear regression equation model, the error disturbance is always stated to be homoscedastic and serially uncorrelated (Gujarati, 2003). Thus, the use of the Ordinary Least Square (OLS) method will produce best linear and unbiased estimates. However, these assumptions cannot be applied to panel data.

The panel data analysis method was chosen for this research due to its advantages in providing positive population parameter estimates, increasing degrees of freedom, and reducing the possibility of collinearity between independent variables. Additionally, panel data analysis allows for the incorporation of inter-temporal disturbances and inter-individual components into the model, making it suitable for examining the determinants of inclusive economic development over time and across different regions. This method also enables the examination of individual and time-specific effects, providing a more comprehensive understanding of the factors influencing inclusive economic development in Indonesia.

If all individual, time, and random noise disturbances are combined into one and follow all the initial assumptions of normally-free and identically distributed random noise, then using the GLS method will produce best linear and unbiased estimates. Therefore, this method follows a normal distribution with a mean of zero as assumed in classical linear regression equations. This method is known as the Random Effect Model or Error Components Model. However, if all the assumptions on the disturbances are not stated to follow the random noise assumption, then the use of OLS or GLS methods will not provide results that meet the best linear and unbiased properties. In this way, the inter-temporal disturbances and inter-individual components will be incorporated into the intercept constant of the model. This is what is referred to as the Fixed Effect Model (Baltagi, 2005).

Based on this, the best model selection is done by conducting the Chow Test and Hausman Test. The Chow test is used to see the comparison between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Meanwhile, the Hausman Test looks at the comparison between the Random Effect Model (REM) and the Fixed Effect Model. Furthermore, classical assumption tests in the form
of multicollinearity and heteroscedasticity are carried out to fulfill the requirements of regression analysis in the form of best linear and unbiased.

**Result and Discussion**

The Prob>F value in the Chow test is 0.000 less than the significance level of 5%, thus rejecting H0 or the selected model is FEM. Followed by the Hausman test which shows that the Prob>F value of 0.000 is less than 0.05, so the FEM is the best model in this study (see Table 1).

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<th>Test</th>
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Then, a multicollinearity test is carried out based on the VIF value, which when the value is more than 10, there is a relationship between variables. The VIF value for all variables is more than 1 and less than 10, with the highest value for the open unemployment rate variable and the lowest for the number of poor people. The heteroscedasticity test uses Breusch-Pagan which shows that Prob Chi² > α with a value of 0.5688 > 0.05. Acceptance of H0 means that the variance of the errors in the regression model is constant or homoscedasticity.

The statistical test based on the FEM model consists of three parts, namely the coefficient of determination (R²) test, simultaneous test (F) and partial test (t). The results show that the R-Square value is 0.7029, meaning that the independent variables used can explain the inclusive economic development index variable by 70.29 percent. The remaining 29.71 is explained by other variables not in the model. Simultaneously through the F test, all independent variables have a significant influence on the inclusive economic development index. This result is shown in the Prob>F value of less than 0.05 with a value of 0.000 < 0.05.

| Variable | Coef. | t   | P>|t| |
|----------|-------|-----|-----|
| IEDI     | -8.608| -5.87| 0.000 |
| Unemployment | -0.039| -2.21| 0.028 |
| GRDP     | 0.041 | 13.02| 0.000 |
| HDI      | 0.199 | 20.79| 0.000 |
| Poor     | 0.059 | 0.29 | 0.771 |

From Table 2, it shows that the open unemployment rate based on a partial test has a negative and significant effect on the inclusive economic development index in Indonesia. The negative effect
is in accordance with Adam Smith’s classical theory which states that any increase in economic growth will absorb labor, thereby reducing the number of unemployed. In line with this theory, the estimation results show that when there is an increase in the open unemployment rate by 1 percent, the inclusive economic development index will decrease by 0.039. Hidayat, Mulatsih, & Rindayati (2020), Etim & Daramola (2020), Pouw & Gupta (2017) dan Amalia, Laut, & Ratnasari (2023) states that the open unemployment rate has decreased with an increase in economic development. The ineffectiveness of economic development begins with economic growth that continues to decline due to increasing poverty (Michael, Emeka, & Emmanuel, 2016; Nwankwo & Ifejiofor, 2014). Poverty occurs due to increased unemployment as a result of lack of employment and unproductive labor.

This effect shows that inclusive economic growth does not maximize the reduction of unemployment in Indonesia (Resy, Anna, & Muklis, 2023). The existence of a negative impact on the local economy on economic life and welfare, further shows that there is a decrease in social levels due to non-inclusive economic growth. This is because the sectors of economic growth have low employment, such as agriculture, trade, and manufacturing. When the employment sector declines, it is directly proportional to the unemployment rate. In line with this, an increase in unemployment makes inclusive economic growth more difficult to achieve. In theory, increased unemployment triggers poverty, lowering per capita income, and leading to poverty, because there are so many unemployed. As poverty increases, growth tends to be inclusive. Because poverty and inclusion are mutually exclusive.

The GRDP rate shows a positive and significant relationship with inclusive economic development in Indonesia. An increase in the GRDP rate by 1 percent will increase inclusive economic development by 0.041. In line with the economic theory of development which states that the level of economic growth and investment has a reciprocal relationship in production activities (Fahriza N, Lubis, & Zakiyyah, 2022). These activities can trigger economic growth and essentially attract investment. Thus, being the first step of economic development activities (Dumairy, 1999). Hysa, Kruja, Rehman, & Laurenti (2020) and Guo & Zhang (2023), It is mentioned that the rate of GRDP is an important indicator in measuring the situation and level of the economy and to see the success of the level of national development. Many countries use this indicator to measure the potential and competitiveness of economic development for policy making.

High economic growth in developing countries has the problem of increasing inequality. (Luiz, 2014). To achieve inclusive economic growth, simultaneous reduction of inequality and provision of country development is required. (Kwilinski, Lyulyov, & Pimonenko, 2023). GDP development is used
as an alternative to estimate economic development with the goal of inclusive growth. Thus, in particular (Askarova, Saddulaev, & Radjabov, 2021) and (Wasiaturrahma & Ajija, 2017) concluded that economic prosperity reflected in the ability to generate GDP is a key driver of economic growth. In turn, the inclusiveness of economic prosperity facilitates the achievement of inclusive economic development.

The human development index has a positive and significant relationship with inclusive economic development. 1 percent increase in HDI will increase inclusive economic development by 0.199. The better the quality of human resources, the higher the efficiency and productivity of a country. In relation to inclusiveness, human resource development through improving knowledge, skills, health, and education can encourage the achievement of economic development. In line with this Omar (2020); Dervis & Klugman (2013); Nainggolan, Lie, Siregar, & Nainggoloan (2022); and Irawan (2022) mentioned that the HDI is one of the indicators to measure the quality of economic development with a composition index in the form of health, education, and living standards.

The degree of success is a sign that the human capital is better, so it is said that social development is economic development. The opportunity to participate in the development process has three main values, namely sustenance, self-esteem, and freedom (Nainggolan, Lie, Siregar, & Nainggoloan, 2022). HDI reflects a more nuanced understanding of human development while being simple enough to remain inclusive (unlike other more complex indices), the HDI is based on data that is likely to have been collected in many countries for a number of years. The HDI criteria are designed to be broad enough to be inclusive of countries social, political and economic diversity while being indicative of a country’s quality of life.

The number of poor people has insignificant effect on inclusive economic development. When the number of poor people increases by 1 person, inclusive economic development increases by 0.05. In fact, the relationship between the two is negative, where the goal of economic development is to reduce the number of poor people through economic growth or income redistribution (Kakwani & Son, 2003). So, poverty prevails even though economic growth increases every year. This means that the relationship between economic growth and poverty is not a causality relationship because the increase in economic growth does not absolutely reduce poverty (AzZakiyyah, 2023). There are many conditions that must be fulfilled to generate inclusive economic growth in terms that economic growth can be enjoyed by all people.

This is based on the trickle-down effect theory which explains that the progress obtained by a group of people automatically trickles down so that it will create jobs. In the end, it will foster an
equitable distribution of the results of economic growth. This means that the theory implies that economic growth will be followed by a vertical flow from the population in the rich category to the poor. Thus, the reduction in poverty is an indirect effect of this vertical flow. This condition opens the opportunity for an increase in poverty as a result of increasing income inequality. Zhu, Basir, & Marie (2022) and Murdiyana & Mulyana (2017) revealed that a decrease in the number of poor people on economic development can be felt in the long term. Furthermore, Dang (2019) mentioned that poverty reduction is influenced by changes in economic growth. Since economic growth is an indicator of economic development, such changes will affect the number of poor people in the long run.

Conclusion

Inclusive economic development can be defined as a process to ensure that all marginalized groups can be fully involved in the development process with the main focus of inclusive development being the distribution of facilities, rights in the form of political participation, as well as involvement in maintaining reproducible provision for the community. The use of the FEM model shows that the open unemployment rate based on partial tests has a negative and significant effect, the GDP rate shows a positive and significant relationship, the human development index has a positive and significant relationship with inclusive economic development. Meanwhile, the number of poor people has a positive and insignificant effect on inclusive economic development in Indonesia. These results contribute information related to the determinants of inclusive economic development in Indonesia. For future researchers, comparisons can be made between provinces to see inclusive economic development in more depth. Suggestions related to inclusive economic development must be in line with its objectives, which are to reduce poverty, create high employment and reduce economic inequality. Poverty reduction can be done by optimizing poverty alleviation programs and a commitment to reduce extreme poverty. Improving the quality of human resources can be done through pre-employment programs that provide a platform to improve skills. This can increase the ability of the community and support the acquisition of jobs and appropriate wages. In addition, equitable and inclusive development can be done by expanding development outside Java and implementing the industrial revolution 4.0.
References


