Human Capital Index in North Sumatera

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Abstract. This study examines the influence of poverty, unemployment and economic development on the trend of human development index in North Sumatra. The research objects are in 33 districts/cities in North Sumatra. This research is quantitative and the type of data used is secondary data using panel regression analysis. The study shows that poverty and economic growth have a negative impact on human development in provinces/cities in North Sumatra. The unemployment rate in the community does not have a significant impact on human development in districts/cities in North Sumatra. Poverty, unemployment and economic growth are able to explain 99.43% of the North Sumatra human development index.

Keywords: Human Development Index, Poverty Rate, Open Unemployment, Growth Economy.

1 Introduction

The success of development can be measured by the ability of society to overcome the economic challenges it faces. Development is the ability to change for the better. According to Todaro, development is often viewed as an economic phenomenon that includes income, economic growth, and other economic phenomena. There are still many countries that have achieved high levels of economic growth still facing problems such as high levels of unemployment, poverty and other social problems (Todaro, 2003)

In North Sumatra, the HDI has increased in recent years, the increase has not been large enough to raise the HDI base to the desired level. This increase will increase the HDI of North Sumatra, exceeding the national human development average (Finance, Ministry, 2021) .
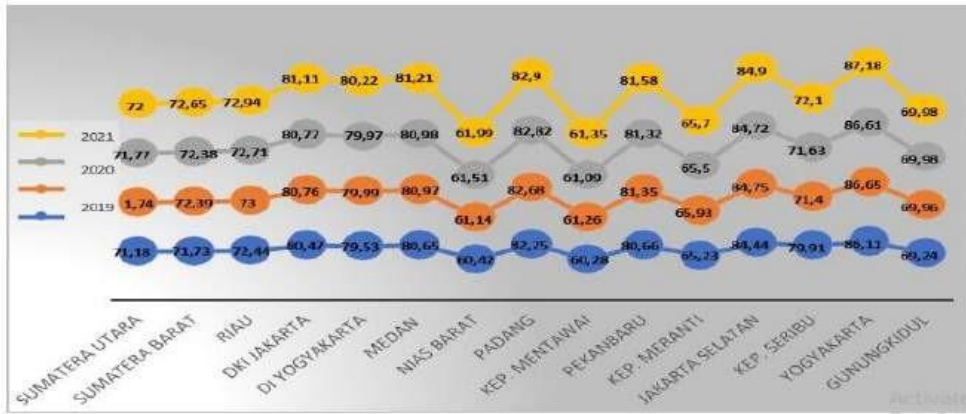
Fig. 1. Human Development Index In Indonesia Year 2018-2021

Based on Figure 1, overall the Jakarta region has the highest HDI in Indonesia. However, North Sumatra did not reach the national average HDI value in the same period. In North Sumatra, Medan City has the best HDI and is the only city with the highest HDI. The status of Medan City in human development in North Sumatra is related to accessibility and available facilities. Per capita spending in Medan City, the economic center of North Sumatra, is higher than other areas.
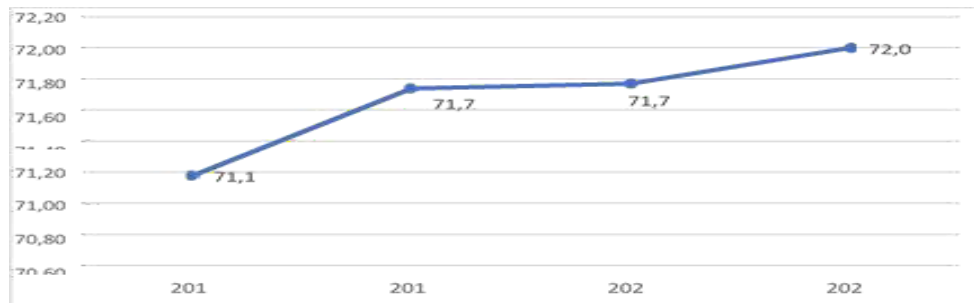

Fig. 2. Human Development Index Province Sumatra North 2018 -2021

Based on Figure 2, during the 2018-2021 period, the Human Development Index in North Sumatra Province increased every year. The Human Development Index in 2018 was 71.18, increasing to 71.74 in 2019 and reaching 71.77 in 2020. In 2021, the Human Development Index of North Sumatra Province reached 72.00. Despite the progress, North Sumatra still ranks 15th in Indonesia, below the national average of 72.29 in human development (Central Statistics Agency of North Sumatra Province, 2022) .

Eradicating poverty is not an easy task because it impacts many aspects of the world. The impact of the COVID-19 pandemic will also be reflected in the increasing poverty rate in 2020.
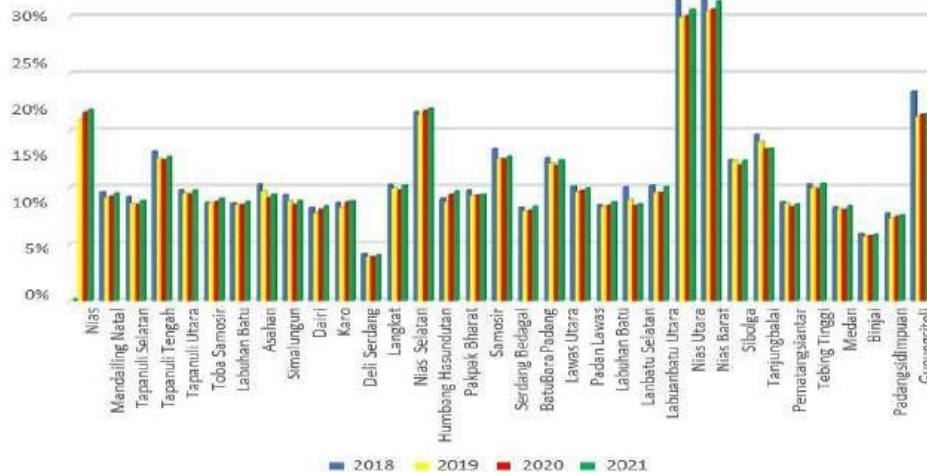
Fig. 3. Percentage of Poor Population in North Sumatra Province 2018-2021

Figure 3 shows that until March 2021, the number of poor people in North Sumatra was lower than the national average, but higher than other regions in Indonesia, with North Sumatra ranked 17th out of 34 regions. The poverty rate in Indonesia is 10.14%. North Sumatra is 9.01% (Central Statistics Agency of North Sumatra Province, 2022) .

The main challenges that hinder social welfare and improve the HDI are poverty and unemployment. These two problems are interrelated. High unemployment increases poverty rates and poverty increases unemployment rates. Unemployment affects income and reduces personal happiness. The decline in national living standards due to unemployment increases the risk of poverty due to lack of income. One way to measure unemployment is open unemployment, namely unemployment who are looking for or preparing to work (Employment, 2021) .
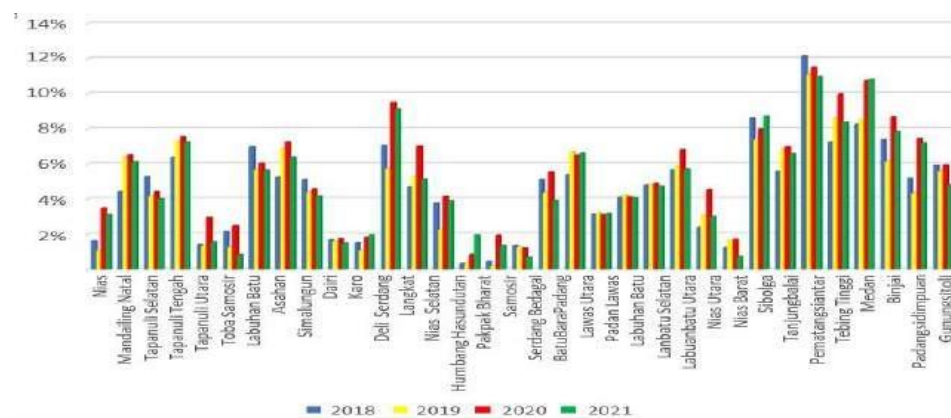

Fig. 4. Open Unemployment Rate in North Sumatra Province 2018-2021

Based on Figure 4, it is explained that the open unemployment rate in various districts/cities in North Sumatra Province tends to experience fluctuating conditions (rising and falling) in the period 2018-2021 .
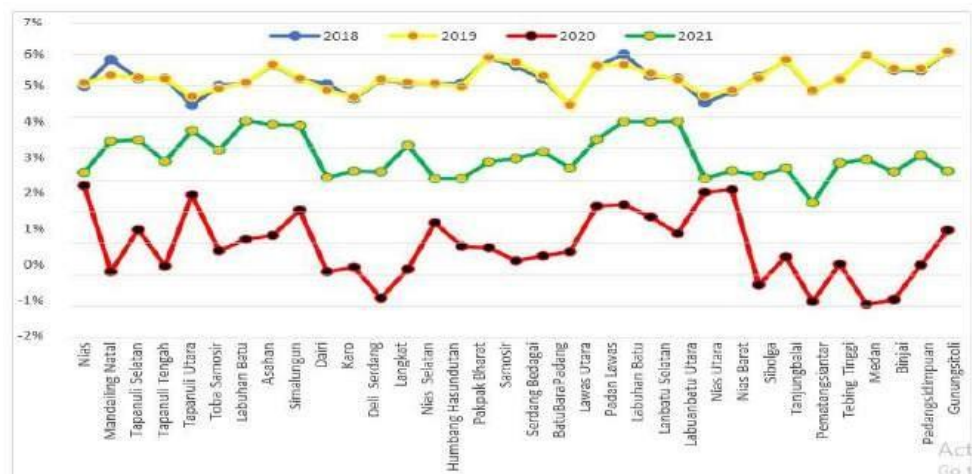

Fig. 5. Rate Growth Economy Province Sumatra North Year 2018- 2021

Figure 5 shows that the speed of economic growth in the North Sumatra region will be influenced by different conditions in 2018-2021. In 2020, the regional/city economy of North Sumatra grew rapidly. This was due to reduced demand due to the COVID-19 pandemic, reduced consumption, and reduced purchasing power due to uncertainty. Economic growth will increase again in 2021. Based on the above, it should be noted that the quality of the HDI which has not reached a high level is due to reasons related to people's lives. North Sumatra.

2   Literature Review

Human Development Index
The Human Development Index (HDI) is used to compare the quality of life across countries. The HDI is a snapshot of social development by considering indicators such as life expectancy, literacy rate, and standard of living. In addition to measuring economic conditions, the HDI shows the extent to which a society has progressed in terms of health, education, and other factors that affect quality of life (BPS, 2020). According to Yusniah Anggraini (2018), the HDI has many benefits. First, it is a key indicator for evaluating the success of improving the quality of life. Second, the HDI is used to determine regional developments. Third, in Indonesia, the HDI has strategic value because it is used to measure government performance and determine the distribution of total income that can be distributed

Poverty

According to Central Bureau of Statistics, poverty is defined as the inability to meet basic needs. Meanwhile, according to UNDP as quoted by Cahyat (2004), poverty includes

limitations in life choices and participation in public decision-making. Poverty often occurs in various forms, including lack of resources, access to social and political systems, and lack of access. Science and technology. Other factors include weak social ties, limited financial resources and limited access to information. Poverty is a serious problem in many countries, especially developing countries, where people face serious problems and cannot meet their basic needs such as food, clothing, medicine and shelter (Hardinandar, 2019).
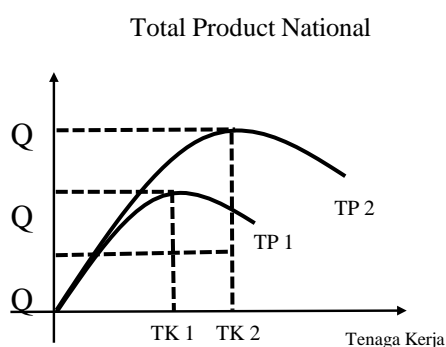
Unemployment

Unemployment is the inability of workers to get jobs, even though they are actively looking for jobs (Nanga, 2001: 253). People who have jobs but are not working are considered unemployed (Sukirno, 2000: 472). The unemployment rate in an area can be measured by comparing the number of unemployed with the number of working population (Remus Silalahi, 2014).

Level Unemployment = (Unemployment Rate/Workface}×100%

Growth Economy

According to Boediono in Tarigan (2004), economic growth is a process that increases the income of each person in the long term. Economic growth here refers to the increase in goods and services that a country can provide per capita. Meanwhile, according to Simon Kuznets in Todaro (2006), economic growth means increasing the long-term ability of a country to provide various economic benefits to its population. This includes increasing the government's ability to produce and provide goods and services needed by the community. Not everyone can fit into this post. If we are forced to do so, then national affairs will be problematic. However, additional labor and capital increase total profits. This function is explained in the following curve:

Total Product National

Fig. 6. The Curve Law of Diminishing Returns

Caption :

a.   The TP1 curve shows the relationship between the number of workers and the level of production of a country. The optimal condition leads to Tk1, the number of workers

involved in production and national employment is Q1. If the number of workers increases by Tk 2 in the 5th year, then national income does not increase but decreases in the second quarter.

b. Increasing the workforce to Level 2 will increase economic growth if capital goods increase and national income reaches the third quarter (Remus Silalahi, 2014).

3 Research Methods

The data used in this study are secondary data on poverty levels, unemployment information and economic growth variables that are believed to affect human development in North Sumatra. Panel data is the type of data used in this study. Data collection was collected from the official website of the Central Statistics Agency (BPS) of North Sumatra. There are 132 observations and data on human development index, poverty, unemployment and economic growth in 33 districts/cities in North Sumatra in 2018-2022. The data analysis tool, namely Eviews 12, is used to process the data for this study.

As for model estimate regression Which used, that is:

$Yit = \alpha + \beta 1 X1it + \beta 2 X2it + \beta 3 X3it$

$\varepsilon it\ IPM = \alpha + \beta 1 TK + \beta 2 PT + \beta 3 PE + \varepsilon it$ (Sugiyono, 2014)

The definition of the equation above is: Y is the human development index in North Sumatra, α is a constant, X1 is the poverty rate in North Sumatra, X2 is unemployment in North Sumatra and X3 is economic growth, independent variable regression, ε is the standard error, the population of 33 districts/cities in North Sumatra and the research period 2018-2021 (Sugiyono, 2014)

The study used panel data such as general effect models, fixed effect models and regression models. The tests conducted were hypothesis tests such as the Chow test, Hausman test, t- test, and F and R^2 statistical tests (R-squared determination coefficient test).

4 Results and Discussion

Panel data regression estimation is designed to see how much influence the independent variables have on the dependent variable. The following are the results of the evaluation of the three modeling approaches used in this study:

Election Model Regression

Selection of Regression Model The Chow Test is a test conducted to compare the common effects model with the fixed effects model :

Table. 1 Test Chow

Redundant Fixed Effects Tests
Equation: FEM
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	187.871311	(32,90.000 6)	0
Cross-section Chi-square	548.194303	320.000	0

The results of the Chow test show the probability of F and one-sided chi-square of 0.0000. This means that we reject H0 and accept Ha because the probability value is less than 0.05, which means that the selected model is a fixed effect.

Table . 2 Test Houseman

Core;ated random effect-hausman Test Equation : REM Test ceoss-section random effect			
Test summary	Chi-sq. statistic	Chi-sq.df.	Prob
Cross-section random	22.423212	3	0.0001

Based on the results of the Hausman test, the random intercept probability value is 0.0001. These results indicate that Ha is accepted and H0 is rejected because the Prob value is less than 0.05, which indicates that the regression estimation model used for panel data is a fixed effect model.

Table . 3 Estimates Model Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	73.79221	1.234848	59.75814	0.0000
Poverty Ratio Presentation X1	-0.242451	0.111468	-2.175085	0.0321
Unemployment X2	-0.045416	0.059730	-0.760360	0.4489
Economic Growth X3	-0.096001	0.019311	-4.971463	0.0000
R-squared	0.994350			
Prob(F-statistic)	0.000000			

From the estimation results using the fixed effect model, the following equation is obtained:

IPM = 73,7921 – 0.24245 TK – 0.04541 PT – 0.096001PE

The resulting value is 73.79221. If the poverty rate, unemployment and economic growth of 33 districts/cities in North Sumatra remain the same, then it can be concluded that the HDI of North Sumatra is 73.79% with a poverty rate of -0.242451. This means that a 1% increase in the poverty rate in 33 districts/cities in North Sumatra can cause a decrease in the human development index of 0.2424%. The value of the community unemployment index coefficient is -0.045416. This means that in 33 districts/cities in North Sumatra, open unemployment increased by 1%, along with a decrease in the rate of human development of 0.045%. The value of the economic growth index is 0.096001. This means that an increase in economic growth in 33 provinces/cities in North Sumatra by 1% will reduce the HDI by 0.096%.

The Influence of Poverty Levels on the IndexDevelopment Man

Based on the results i, the poverty index is -0.242451 and the probability value is 0.0321

(0.05), so it can be concluded that this index has a negative value. This shows that poverty has an impact on the human development index of North Sumatra. This is in line with Todar's hypothesis and theory which states that human development is the goal of development. By predicting the unemployment rate, we can see changes in many areas that affect people's income growth and improve their quality of life. In addition to food needs, home cooking and education, strengthening human development and reducing unemployment will increase the human development index. (Todaro, 2006) .

The Influence of Open Unemployment Rate on the IndexDevelopment Man

Based on the results of the influence of the social unemployment rate on the human development index, the social unemployment rate was obtained at -0.045416 and a probability of 0.4489 (> 0.05), so it can be concluded that unemployment has a negative value. and a low impact on the human development index in North Sumatra. According to Todaro's hypothesis and theory, human development is the goal of development. Overcoming unemployment seems to have an impact on increasing people's income to improve human development and achieve various improvements in life, such as diet, nutrition, etc., family care and education. The decline in unemployment has an impact on increasing the progress of the human development index. (Todaro, 2000)

The Influence of Economic Growth on the IndexDevelopment Man

Based on the estimation results, the economic growth coefficient was obtained as -0.096001 with a probability of 0.0000 (<0.05) which shows that economic growth has a negative and significant effect on the Human Development Index (HDI) in North Sumatra

.Influence Level Poverty, Unemployment Open, And Growth Economy Against Index Development Man

Based on results test simultaneous obtained mark as big as 0.000000 (<0.05) Which means that variable Level Poverty, Unemployment Open, And Growth Economy influential significant against the Development Index Man In Sumatra North.

5   Conclusions

The government should implement programs that include direct loans to poor families, food assistance, education and training support. These efforts should target regions/cities in North Sumatra. To improve the Human Development Index (HDI) in the context of open unemployment, it is important to implement policies that focus on job creation, skills development and economic opportunities. Increasing job opportunities and economic stability reduce unemployment rates, increase income and improve people's living standards, which ultimately increase the availability of jobs in the region. To overcome the negative relationship between economic growth and HDI.

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