

Human Development Index And Employment Provision In Medan City

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Abstract

This study aims to analyze the effect of economic growth and the number of industries on the provision of employment in the city of Medan. Where there are two dependent variables, namely the human development index and employment. There are five independent variables, namely GRDP, number of industries, population, wages and local revenue. This study uses secondary data or time series, namely from 2015 to 2021. The data analysis model in this study uses the Simultaneous Regression method. There is one variable for simultaneous results that shows an effect on the human development index, namely GRDP and has a positive and significant effect on the human development index. For the effect on employment, there are two variables for simultaneous results that show the effect on employment, namely the number of residents has a negative and significant effect on employment and wages have a positive and significant effect on employment.

Keywords: *Gross Regional Domestic Product, Number of Industries, Human Development Index and Employment.*

I. INTRODUCTION

One of the cities that is facing problems in economic development is Medan City, with a large population, the problem caused by the local government is how to increase employment opportunities to ensure the economic level of its people. Limited employment opportunities are a problem that must be resolved by the Medan city government in this era of globalization. The more successful the Medan City government in providing employment, the rate of economic growth will increase and of course job opportunities will increase and can also reduce the high crime rate in society. The purpose of this study was to determine the effect of economic growth and the number of industries on the level of employment in the city of Medan. The following is the percentage of the working population by business field group and Medan City (Percent).

Table 1. Working Age Population by Business Field

Years	Sector		
	Serv	Industry	agriculture
2016	75,50	20,60	3,90
2017	80,93	14,38	4,69
2018	76,77	19,13	4,11
2019	75,06	19,73	5,21
2020	73,54	22,77	3,69

Source : BPS, 2022

Based on the data above, it can be seen that the working age population in the service sector is the highest at 80.93%, while in the industrial sector it is 22.77% and in the agricultural sector it is 5.21%. The following is a presentation of the labor force participation rate in the city of Medan in 2017-2020.

Table 2. Labor Participation Rate

Annual	Participation Rate
2020	63,62
2019	64,89
2018	65,99
2017	64,35

Source : BPS, 2022

Based on the BPS data above, it can be seen that the labor participation rate of Medan City in 64.35% increased in 2018 to 65.99%, in 2019 decreased to 64.89% and in 2020 there was a decrease in labor participation. to 63.62%. The decline in the level of work participation indicates that the number of jobs in the city of Medan has decreased. The decline in employment is a factor in the decline in the level of work participation due to the declining quota for labor acceptance. One of the factors that can affect the low absorption of labor is the quality of Human Resources. The quality of human resources can be seen from the quality of life index/human development index. The low Human Development Index (HDI) will result in low work productivity of the population. Efforts to increase HDI cannot be separated from the role of local governments in allocating sources of regional income in regional expenditures for sectors that can increase HDI, such as education, health and infrastructure.

Low productivity results in low income. So that with low income causes a high number of poor people. Human development as a process of expanding various options to meet basic human needs in terms of education, health and purchasing power. Based on the calculation results, Medan City's HDI in 2020 is 71.77%. The HDI figure is calculated from the aggregation of three dimensions, namely a long and healthy life, knowledge, and a decent standard of living. Each dimension is represented by an indicator. Dimensions of longevity and healthy life are represented by indicators of life expectancy at birth. Meanwhile, the average length of schooling and the expected length of schooling are indicators that represent the dimensions of knowledge. Finally, the dimension of decent living standards is represented by an adjusted per capita expenditure indicator. The following is the development and growth of the quality of human resources in Medan City as measured by the Human Development Index (IPM).

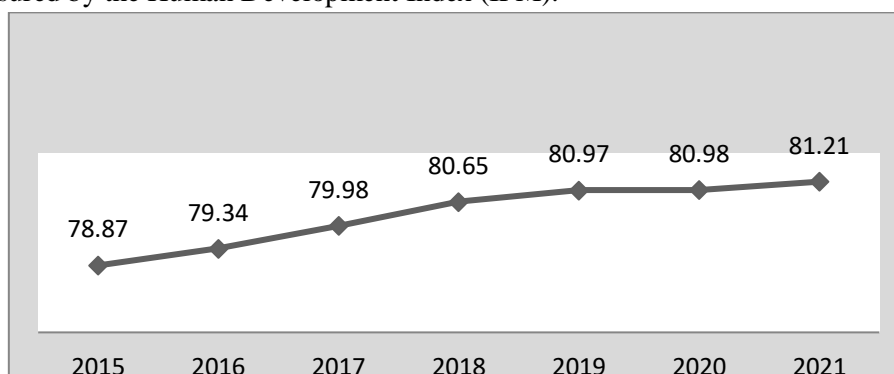


Fig 1. Development of Medan City Human Development Index 2015-2021

Figure 1.1. It can be seen that the Human Development Index in Medan City has fluctuated from 2015 to 2021. The HDI growth is one way to see the development of human development in an area. The HDI in Medan City from 2015-2021 experienced an average growth of 0.8 percent per year. This development shows the improvement of human development in general in the city of Medan. In 2021, the HDI achievement in Medan has reached 81.21. This figure increased by 0.23 points from the achievement in 2020 which was 80.98. The important factor that can affect the decline in employment is low economic growth. Local governments are always trying to improve the economy in their respective regions. The success of a local government head can be seen from its economic growth.

The increasing economic growth of a region can be used as an indicator that the government has succeeded in increasing the standard of living of the regional economy. On the other hand, if economic growth decreases, it can be ascertained that the government has failed in carrying out the improvement program for the prosperity of the region. The development of economic growth theory and the increasing availability of regional data have led to increased attention to regional inequality in growth. In economic development, the main goal of economic development is to improve the economy. Stakeholders who are directly involved in the process of economic development, namely the government and society in general. Because declining economic growth can result in not achieving the goals of economic development, namely the welfare of the people and reducing poverty. The following is a graph depicting the economic growth of Medan City.

Table 1.3. Medan City's Economic Growth Rate

Annual	Growth Rate of Gross Regional Domestic Product at Constant Prices
2015	124.269.931,39
2016	132.062.863,52
2017	139.739.341,78
2018	148.007.137,48
2019	156.780.580,88
2020	153.669.775,83
2021	157.689.186,50

Source: Central Bureau of Statistics, 2022

Based on Table 1.3. growth rate of gross regional domestic product at constant prices, 2015 - 2021 that the economic growth of Medan City in 2016 has increased from 124.269.931.39 billion Rupiah to 132.062.863.52 billion Rupiah. Then in 2017 to 2019 there was an increase. In 2020, the Gross Regional Domestic Product decreased from 156,780,580.88 Billion Rupiah to 153,669,775.83 Billion Rupiah. In 2021 the GRDP in Medan City will increase to 157,689,186.50 billion Rupiah. Economic growth that is not significant and tends to stagnate indicates that the economic pace of Medan City is not moving well enough so that it can be illustrated that the economy of Medan City has not changed at all so that its impact on the economy of the wider community in Medan City is not felt.

II. MATERIALS & METHODS

Simultaneous Regression Model

The formula used to prove the research hypothesis is as follows:

$$\begin{aligned} IPM &= C(10) + C(11) * PDRB + C(12) * JI + C(13) * PAD + C(14) * LK + e_1 \\ LK &= C(20) + C(21) * JP + C(22) * UPH + C(23) * IPM + e_1 \end{aligned}$$

Information:

HDI	= Human Development Index
GRDP	= Gross Regional Domestic Product
JI	= Number of Industries
PAD	= Regional Original Income
LK	= Employment
JP	= Number of Industries
UPH	= Wage
C	= Constant
0- 3	= regression coefficient
e1	= term error

III. RESULT AND DISCUSSION

Simultaneous Regression Research Results

Estimation to determine the effect of variables in 2 simultaneous equations is carried out using the Two-Stage Least Squares model. The estimation results of the system of equations with Two-Stage Least Squares are shown in the table below.

Table 4. Estimation Results of the Two-Stage Least Squares . Equation

System: SIMULTAN
Estimation Method: Two-Stage Least Squares
Date: 04/12/22 Time: 23:02
Sample: 1 7
Included observations: 7
Total system (balanced) observations 14

	Coefficient	Std. Error	t-Statistic	Prob.
C(10)	1.453055	0.366448	3.965238	0.0107
C(11)	0.128387	0.040476	3.171924	0.0248
C(12)	-0.015654	0.019146	-0.817630	0.4508
C(13)	-0.092799	0.057729	-1.607491	0.1689
C(14)	0.057494	0.060208	0.954931	0.3835
C(20)	25.36280	4.807704	5.275450	0.0033
C(21)	-3.559943	0.457078	-7.788474	0.0006
C(22)	1.285333	0.210485	6.106539	0.0017
C(23)	-2.946642	2.109986	-1.396522	0.2214
Determinant residual covariance		5.65E-11		

Equation: $IPM=C(10)+C(11)*PDRB+C(12)*JI+C(13)*PAD+C(14)*LK$

Instruments: PDRB JI PAD JP UPH C

Observations: 7

R-squared	0.916893	Mean dependent var	1.905714
Adjusted R-squared	0.750679	S.D. dependent var	0.005345
S.E. of regression	0.002669	Sum squared resid	1.42E-05
Durbin-Watson stat	2.724516		

Equation: $LK=C(20)+C(21)*JP+C(22)*UPH+C(23)*IPM$

Instruments: PDRB JI PAD JP UPH C

Observations: 7

R-squared	0.973203	Mean dependent var	5.365714
Adjusted R-squared	0.946406	S.D. dependent var	0.038668
S.E. of regression	0.008952	Sum squared resid	0.000240
Durbin-Watson stat	2.645222		

Source: Processed by the author through eviews 10, 2022

Based on the results of the structural equation output, it can be seen that there are 2 equations, the following is an explanation in the 2 equations:

a. Equation 1 Test Results

The first equation is the equation used to simultaneously determine the HDI (Human Development Index), with the following equation:

$$IPM=C(10)+C(11)*PDRB+C(12)*JI+C(13)*PAD+C(14)*LK$$

Based on this equation, the results of the output eviews with the Two-Stage Least Squares model are as follows:

$$IPM=1.453055+0.128387*PDRB-0.015654*JI-0.092799*PAD+0.057494*LK$$

According to the estimation results obtained, it shows that $R^2 = 0.916893$ which means that the variables GRDP (Gross Regional Domestic Product), JI (Number of Industry), PAD (Regional Original Income), and LK (Job) can explain the HDI (Human Development Index) of 91.68% and the remaining 8.32% HDI (Human Development Index) is influenced by other variables outside the estimation in the model. Based on the estimation results obtained by t-count, there is (one) variable that significantly affects the HDI (Human Development Index), namely GRDP (Gross Regional Domestic Product) at $= 0.05$ or $= 5\%$, the probability value is $0.0248 < 0.05$ so that GRDP (Gross Regional Domestic Product) has a significant effect on the HDI (Human Development Index). Other variables are JI (Number of Industries) with a probability value of $0.4508 > 0.05$, PAD (Regional Original Income) with a probability value of $0.1689 > 0.05$ and LK (Job Employment) with a probability value of $0.3835 > 0.05$ has no significant effect on HDI (Human Development Index) because the probability value of the three variables is greater than $= 0.05$ or $= 5\%$. These results indicate that most of the variables very significantly affect the HDI (Human Development Index) in Medan so that the accuracy of the research is very reliable.

b. Equation 2 test results

The second equation is the equation that is used to simultaneously determine the LK (Employment), with the following equation:

$$LK=C(20)+C(21)*JP+C(22)*UPH+C(23)*IPM$$

Based on this equation, the results of the output views with the Two Stage Least Square model are as follows:

$$LK=25.36280-3.559943*JP+1.285333*UPH-2.946642*IPM$$

According to the estimation results obtained, it shows that $R^2 = 0.973203$, which means that the variables JP (Total Population), UPH (Wage) and HDI (Human Development Index) can explain LK (Job) by 97.32% and the remaining 2, 68% LK (Employment) is influenced by other variables outside the estimation in the model. Based on the estimation results obtained by the t-count value, there are 2 (two) variables that significantly affect LK (Employment) namely JP (Total Population) at $= 0.05$ or $= 5\%$, probability value $0.0006 < 0,05$ so that JP (Total Population) has a significant effect on LK (Job). Another variable, namely the UPH (Wage) is also significant at $= 0.05$ or $= 5\%$, the probability value is $0.0017 < 0.05$ so that the UPH (Wage) variable has a significant effect on LK (Job). Another variable is HDI (Human Development Index) with a probability value of $0.2214 > 0.05$, which means it has no significant effect on LK (Job) because the probability value of the variable is greater than $= 0.05$ or $= 5\%$. These results indicate that most of the variables very significantly affect LK (Job) in Medan so that the accuracy of the research is very reliable.

DISCUSSION

Effect of GDP on HDI

Gross Regional Domestic Product (GRDP) has a positive and significant effect on the Human Development Index (IPM), meaning that if GRDP increases, the HDI will also increase. The results of this study indicate that the Gross Regional Domestic Product (GRDP) has a positive and significant effect on the Human Development Index (IPM).

The influence of the number of industries on HDI

The results of my research show that the number of industries has a negative and insignificant effect on the Human Development Index (HDI). It can be stated that the number of industries in the city of Medan has no influence on the human development index.

The effect of local revenue on HDI

The results of my research show that local revenue has a negative and insignificant effect on the human development index.

Effect of employment on HDI

Based on the results of data analysis, it is known that employment has a positive and insignificant effect on the human development index. This means that employment has no relationship with the human development index in the city of Medan.

The effect of population on employment

Based on the results of data analysis, it is known that the population has a negative and significant effect on employment. This means that the high number of residents in the city of Medan will result in a decrease in employment opportunities in the city of Medan.

Effect of wages on employment

Based on the results of data analysis, it is known that wages have a positive and significant effect on employment. In accordance with the existing theory regarding the demand for labor, an increase in the minimum wage will actually reduce the demand for labor, which in turn will also reduce the absorption of labor. If the higher the wage rate is set, it will affect the increase in production costs, as a result, in order to make efficiency, the company is forced to reduce labor, which results in low levels of employment.

The influence of HDI on employment

Based on the results of data analysis, it is known that the human development index has a negative and insignificant effect on employment.

IV. CONCLUSION

Based on the results of the analysis and discussion that has been carried out, the following conclusions can be drawn: Based on the results of the research in the first equation, it can be seen that only the Gross Regional Domestic Product (GRDP) variable has a positive and significant influence on the Human Development Index (HDI), due to the high level of GRDP will cause consumption patterns in the community to increase and in this case will increase the level of purchasing power. The high level of purchasing power in the community will affect the human development index. The higher the GRDP level, the higher the Human

Development Index in the city of Medan. Meanwhile, the variables of the number of industries, local revenue, and employment have no significant effect on the human development index. The reason could be due to the number of industries that are not operating and the number of jobs is getting smaller so that many people live in the poverty line. Based on the results of the research in equation two, it is known that the wage variable has a positive and significant effect on employment. While the population variable has a negative and significant effect on employment, and the human development index has a negative and insignificant effect on employment. The number of people who have no effect on employment could be due to the fact that the population is still more dominated by non-productive age, so the number of jobs for the community is still large. Meanwhile, the human development index has no significant effect on employment.

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