ANALYSIS OF THE EFFECT OF LIFE EXPECTANCY (AHH) AND PER CAPITA EXPENDITURE ON THE HUMAN DEVELOPMENT INDEX (HDI) IN CENTRAL SULAWESI PROVINCE IN 2019

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ABSTRACT

A measurement of a nation's human resource condition is the human development index (HDI). The three components of the human development index are living standards, often known as economics, and health. In Central Sulawesi Province in 2019, this study seeks to ascertain the impact of life expectancy (AHH) and per capita spending on the human development index (HDI). Secondary data from the Central Statistics Agency (BPS) of Central Sulawesi Province, corroborated by additional sources, was used in this study. The multiple linear regression analysis methods were the analysis technique used in this study.The findings demonstrated a positive and significant impact of partially variable Life Expectancy (AHH) and per capita spending variables on the Human Development Index (HDI). The Human Development Index (HDI) in Central Sulawesi Province is thereafter significantly impacted by the combination of the two independent factors in 2019.

Keywords: *Life Expectancy (AHH), Per Capita Expenditure, Human Development Index (HDI)*

INTRODUCTION

In 1990 The UN through one of its children's organizations, UNDP, for the first time published an annual report containing the ranking of countries in the world to measure a country's achievements in building its resources. HDI (Human Development Index) or Index Human Development (HDI). This index is measured using 4 aspects, namely life expectancy; Education; rough participation figures; and economics or purchasing power parity index (Damayanti S, 2018).

HDI is an indicator that explains how the population of a region has the opportunity to get their rights from the results of development in obtaining income, health, education, and so on. A healthy and well-educated society will affect the increase in people's productivity, which in turn will also increase spending on consumption. So the poverty rate will decrease when spending on consumption increases. On the other hand, low HDI results in low work productivity in the population. The increase in income can cause a high number of poor people, one of the causes of which is the increase in productivity (Sukmaraga, 2011).

The positive growth rate in Central Sulawesi Province will influence improving the welfare of its people and increase the income per capita.   The improvement in the quality of human resources is influenced by the Economy. The Human Development Index (HDI) can be used to see the quality of human resources that are useful to be used as a comparison of human development performance both between countries and between regions (Kuncoro, 2000).

Central Sulawesi is one of the 12 provinces in Indonesia with a moderate HDI value. The HDI achieved by Central Sulawesi was recorded at 68.88 and which was very below Indonesia's HDI of 71.39. HDI Central Sulawesi itself is ranked 25th out of 34 provinces in Indonesia. This ranking has increased when compared to the previous year, which was ranked 26th. Based on the calculation from 2011-2018, the HDI growth value of Central Sulawesi has relatively decreased in   2011-2015 from 1.54% to 0.49%, an increase in 2017-2018 from 0.95% to 1.13%.

The analysis's results are anticipated to provide instructions or information about the relationship between life expectancy and per capita spending on Central Sulawesi's Human Development Index (IPM) in 2019 as well as the variables that affect the index.

MATERIALS AND METHODS

1.1 IPM

The Human Development Index (HDI) is a measure of the efficiency of human development based on several fundamental components of quality of life. HDI describes several components, namely achieving longevity and health which is the domain of health; Literacy, school attendance, and an average length of schooling measure the development of the education sector; and people's purchasing power for some basic needs, reflected in the average expenditure per population, Statistics Finland (2007)

According to Sjafi'i and Hidayanti (2009), the availability of quality human resources is an important prerequisite for sustainable economic development. it can be concluded that human resources are essential for sustainable economic development. Therefore, if a country wants to build a long-term and mutually sustainable economy, then it is very important to improve the Human Development Index which improves the quality of human resources in the country. Human resources are the knowledge and skills that employees gain through education ranging from programs for children to internships for adult employees (Mankiw, 2003).

1.2 Life Expectancy (AHH)

Life expectancy (AHH) is the average number of years of a person's life after they are x years old. In this case, a commonly used measure is life expectancy at birth (AHH), which reflects the current health status (Tanadjaja et al, 2017).

According to Anggraini and Lisyaningsih (2013), Life Expectancy (LAH) is closely related to the socioeconomic development of an area. The higher the Life Expectancy (AHH) in an area, this indicates the socioeconomic development of the region is progressing. The success of health programs and socioeconomic programs, in general, can be seen in the increasing life expectancy of the residents of the region. If the socio-economic development of a region increases, life expectancy (AHH) will be even higher. In contrast, low life expectancy (AHH) refers to the deterioration of some sectors of regional socioeconomic development. Health promotion initiatives, as well as other social programs including those for proper nutrition, calorie intake, and environmental health, must be used to address the low life expectancy in the area.

1.3 Per Capita Expenditure

Expenditures calculated per capita are used to measure a person's standard of living. It is also influenced by existing knowledge and the possibility to implement knowledge in different production functions to generate output as income in the form of goods or services. The existing income then generates expenses or consumption. Per capita expenditure indicates the level of purchasing power parity (PPP) of a society and is one of the factors used to assess the level of human development in an area (Mahrany, 2012).

In general, according to Adelman and Morris, there are eight reasons for the uneven distribution of income: high population growth leads to a decrease in per capita income, and inflation, in which the income of money increases but is not followed by a proportional increase in income. Commodity production, uneven development between regions, huge investment in capital-intensive projects (capital interest), low social mobility, and the implementation of import substitution industry policies, which led to an increase in the price of manufactured products and a deterioration of trade relations in countries that are still trading. with developing countries (Lincolin, 2010).

1.4 Data Type and Source

The data used in this study is secondary data taken from the Central Statistics Agency of Central Sulawesi. The secondary data used are 2019 data on life expectancy (AHH), per capita expenditure, and the human development index (HDI).

1.5 Population and Sample

The population of this study includes all data on Life Expectancy (AHH), Per Capita Expenditure, and Human Development Index (HDI) in Central Sulawesi in 2019. The method used in this study is saturated sampling. "The saturated or census sampling method is a sampling technique that includes all members of the population as a sample" (Sugiyono, 2008). Based on this sampling technique, the number of samples (n) is determined from the data on life expectancy (AHH), per capita expenditure and human development index (HDI), ie. H.13 Regencies in Central Sulawesi in 2019.

1.6 Data Collection Methods

In this study, the data collection method used was to take data from the website of the Central Statistics Agency of Sulawesi Regency, in addition to completing the research data, information was also sought through searching data on the internet. The method used in this study is a literature study supported by quantitative descriptive analysis of secondary data. Province in 2019 Data sourced from BPS Central Sulawesi.

1.7 Research Variables

The research variables used in this study consist of:
Dependent variable (Y) namely:
-     Human Development Index (HDI)
Variable independent (X) namely:

- Life Expectancy (X_1)
- Per Capita Expenditure (X_2)

1.8 Analysis Method

Multiple linear regression analysis, traditional hypothesis tests (normality test, autocorrelation test, multicollinearity test, heteroskedasticity test), partial test (t-statistical test), coefficient of determination, and simultaneous test are the data analytic techniques employed in this work (F-Statistical Test). The analysis tool of choice is SPSS 25.

1.9 Data Analysis Techniques

To analyze the life expectancy (AHH) rate, per capita expenditure on the human development index (HDI) used multiple linear regression analysis as follows:

$$Y = b_0 + b_1 x_1 + b_2 x_2 + e \qquad (1)$$

where:

Y : Human Development Index (HDI)

x_1 : Life Expectancy

x_2 : Per capita Expenditure

b_0 : constant

bi : regression coefficients of variables i =1 and 2 respectively

e : error term

RESULTS AND DISCUSSION

3.1 Research Results

Through data processing of the variables used in this study, the following research results were obtained:

The results of multiple regression and partial tests are as follows:

Table 1. Multiple Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	2,285	8,138		0,281	0,785
Life Expectancy (X_1)	0,742	0,127	0,374	5,829	0
Per capita Expenditure (X_2)	0,002	0	0,76	11,854	0

Multiple linear regression models:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e \qquad (2)$$
$$Y = 2.285 + 0.742 X_1 + 0.002 X_2 + e \qquad (3)$$

The regression coefficient for the life expectancy variable (AHH) is + 0.742 and the per capita expenditure variable is +0.002 with a constant value of 2.285

- The value of the constant 2. 285 means that if all free variables (Life Expectancy (AHH) and per capita expenditure) are equal to zero, then the value of the Human Development Index (HDI) in Central Sulawesi Province in 2019 is 2. 285.
- The value of the regression coefficient of the Life Expectancy (AHH) variable is +0. 742. This states that with every increase in Life Expectancy (AHH) (X_1) by 1%, the Human Development Index (HDI) (Y) will increase by 0. 742 percent.

- The value of the regression coefficient of the variable per capita expenditure is +0.002. It states that for every increase (X_2) of 1%, the value of the Human Development Index (HDI) (Y) will increase by 0. 002%.

The influence of free variables on partially or individually bound variables can be seen in the calculated t-test values and then compared to the t-table values. The results are as follows:
- t count for the variable Life Expectancy is 5.83 > t table 2. 23, with a significance value of 0.000 < 0.05, then H 0 is rejected which means that partially the variable Life Expectancy (AHH) has a significant effect on the Human Development Index (HDI) in 2019 and has a positive relationship.
- t the count for the per capita income variable is 11.85 > t table 2. 23, with a significance value of 0. 000 < 0.05, then H0 rejected which means that partially the per capita expenditure variable has a significant effect on the Human Development Index (HDI) in 2019 and has a positive relationship.

The results of Multiple Regression Test and Simultaneous Influence as follows:

Table.2 F Test Results

Model	Sum of Squares	Df	Mean Square	F	p-value
Regression	252,625	2	126,312	145,746	0,000
Residual	8,667	10	0,867		
Total	261,292	12			

Based on the above output, it is known that the significance value for the simultaneous influence of X_1 and X_2 on Y is 0.000< 0.05 and the calculated F value is 145.746 > 4.103 which is the F value of the table. So it can be concluded that H0 is rejected which means that there is an influence of X_1 (Life Expectancy (AHH) and X_2 (Per capita expenditure) simultaneously on Y (Human Development Index (HDI)).

The correlation or closeness of the relationship between free variables and bound variables can be seen in the magnitude of the correlation test results, namely the R test:

Table.3 Correlation and Coefficient of Determination

R	R Square	Adjusted R Square	Standard Error of Estimate
0,983	0,967	0,96	0,93095

The results of the R test showed that the relationship between Life Expectancy (AHH) and per capita expenditure as a free variable in this study with the value of the Human Development Index (HDI) as a bound variable was 0.983. This means that between free variables and bound variables there is a very close and positive relationship.

The contribution or determination of free variables to bound variables in this study can be seen in the determination test (R Square or R²). The results listed in the table above show that the value of R Square is 0.967 or 96.7%. This means that the influence of variables X_1 and X_2 on variable Y is 96.7%, while 3.3% is influenced by other variables that are not studied.

CONCLUSION

Based on the results of the investigation, it can be said that variables such as life expectancy (AHH) and per capita spending partially have a positive and significant impact on the Human Development Index (HDI). The Human Development Index (HDI) in Central Sulawesi Province is thereafter significantly impacted by the combination of the two independent factors in 2019.

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