

Analysis of the Influence of Education Sector Spending, Health Sector Spending, and Economic Growth on the Human Development Index in East Java Province

Oveliana Puspitasari¹, Ririt Iriani Sri Setiawati^{2*}

Universitas Pembangunan Nasional "Veteran" Jawa Timur, Indonesia

Corresponding Author: Ririt Iriani Sri Setiawati ririt.iriiani.ep@upnjatim.ac.id

ARTICLE INFO

Keywords: Human Development Index, Government Spending, Economic Growth

Received : 15, July

Revised : 30, July

Accepted: 15, August

©2025 Puspitasari, Setiawati : This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

The high value of HDI shows that the government provides development investments that are centered on humans with the goal of encouraging productivity. A country with a high HDI value can be categorized as having the quality of human resources that are heading perfectly. According to UNDP, HDI was formed on 3 basis which are: Longevity and healthy living, Knowledge, Decent living standards. The study uses multiple linear regression analysis to analyze the influence of government expenditure in the education sector, government expenditure in the health sector, and economic growth on HDI. Also, the researcher also conducted a classical assumption test using the time series analysis method. The conclusion obtained from this study is that the education sector has an effect on HDI, while the health sector expenditure variable has no influence and the economic growth variable has a negative influence on HDI in East Java Province.

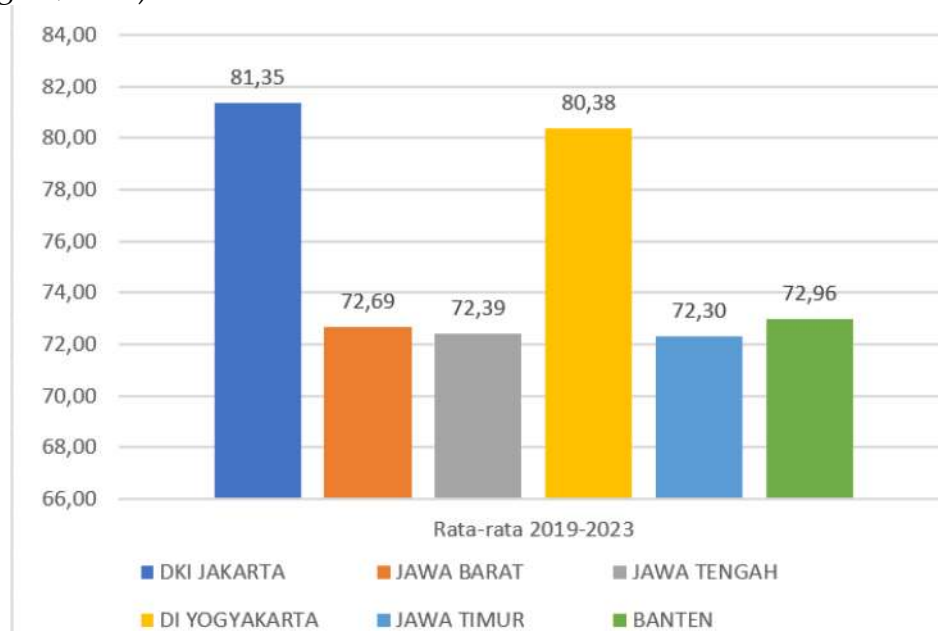
INTRODUCTION

The Human Development Index is an important aspect to measure the country's economic progress (Setiawan & Fikriah, 2020). Countries with high HDI can be categorized as countries with stable economies and high productivity societies so that they will create sustainable growth and development. The development of a country can not only be seen from the state income that continues to increase, but also from the increasing quality of elementary education (Sari, 2024).

HDI is the most basic sector in development (Rifa & Waluyo, 2023). Quality human resources are the initial capital for economic growth by creating an innovation and increasing competitiveness by maximizing the use of technology that has a high level of novelty.

The high value of HDI shows that the government provides development investments that are centered on humans with the goal of encouraging productivity. A country with a high HDI value can be categorized as having the quality of human resources that is perfect (Wardhana et al., 2021). According to UNDP, HDI was formed on 3 basis which are: Longevity and healthy living, Knowledge, Decent living standards.

UNDP provides 4 classifications of IP groups, namely: *low* (HDI < 60), *lower-medium* (HDI 60-70), *upper-medium* (HDI 70-80) and *high* (HDI > 80) (Angkat, 2023).



Source: BPS, 2023

Figure 1. Average Human Development Index based on Province in Java Island in 2019-2023

Figure 1 shows the average human development index for the six provinces on the island of Java from 2019-2023. East Java Province has the lowest average of the six provinces on the island of Java with an average score of 72.30, Central Java Province is in the fifth position with an average of 72.39, West Java Province is in the fourth position with an average of 72.69, Banten Province is in the third position with an average of 72.96, DI Province is 4 Yogyakarta is in

second place with an average of 80.38, DKI Jakarta Province is in first place with an average of 81.35. Of the entire island of Java, the provinces with the highest HDI values are Jakarta and Yogyakarta, which have HDI values in 2023 of 83.08 and 81.55, respectively. To overcome this, collaboration between the government and the community is needed in improving the quality of human resources towards the best. This can be done through efforts to equitably distribute development from districts/cities according to the needs of each region. In order for the human growth index to increase, the government must develop a policy that is considered capable of optimizing achievement to a higher level. Fiscal policy has a great influence on the outcome of the goal, namely through spending policy. Good education and health will be realized with budget allocations in the education and health sectors to support the improvement of human resource development (Laode et al., 2020). The government through the State Budget has allocated spending according to the education and health functions increasing every year, this is carried out to improve the quality of life of the community and the quality of human development.



Source: BPS, 2023

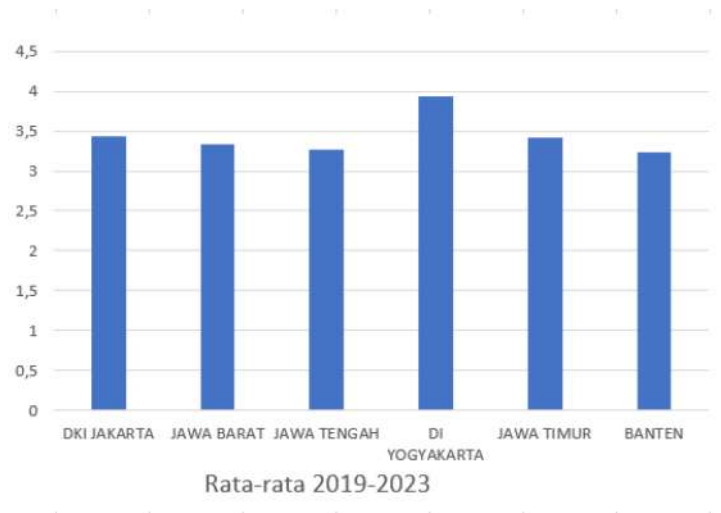
Figure 2. Development of Central Government Expenditure Based on Function Year 2019-2023

Figure 2 gives an overview of the increase in the budget for the health function and expenditure in the last 5 years, in government spending in the education sector there was a decrease in the budget in 2019 but in the following year there was another increase in the budget. As a form of the government's seriousness towards human development, according to Mongan in the journal (Setiawan & Fikriah, 2020), article 31 paragraph (4) of the 1945 Constitution was given, which was later amended in 2009, the State mandated that the health sector be given a minimum allocation of funds of 20% of the total State Budget and Regional Budget. The allocation of the health sector is regulated in Law No. 36 of 2009 article 171 which provides a mandate for the health sector to be allocated funds of at least 5% of the state budget, and at least 10% of the regional budget.

In addition to government spending in the education and health sectors, there are still other factors that can be used as a reference for improving the quality of human resources, namely the economic growth of a region. This

growth is closely related to people's productivity. Increasing people's productivity in producing goods and services will cause community welfare that can improve the quality of their human resources (Irawan et al., 2022).

Administratively, East Java Province has 29 regency and 9 cities. East Java is the province with the most regencies/cities. However, this is not supported by high human development. In East Java, there are only 7 regencies/cities with a relatively high Human Development Index. East Java is the center of industrial and trade growth because of its strategic position, namely between Central Java and Bali.



Source: BPS, 2023

Figure 3. Average GDP Growth Rate at Constant Prices 2010 by Province in Java Island in 2019-2023

From this data, for the last five years in 2019-2023 the average annual GDP growth rate at constant prices in East Java is 3.41. Compared to the provinces of DI Yogyakarta and DKI Jakarta, East Java Province ranks 3rd highest growth rate in Java.

The results of research conducted by Tjodi (2018) say that economic growth has a positive and significant effect on HDI, which means that the increase in economic growth achieved by the region is able to encourage the improvement of human resources. Research (Hasibuan & Syahbudi, 2022) revealed that there is a significant influence of government spending in the education sector with HDI.

Problems related to HDI are national in nature, so it is necessary to have a balance of sustainable development from heterogeneous factors that are likely to have an influence on the quality of human resources. From the background, the author is interested in understanding more deeply about the problem of the human development index in East Java.

THEORETICAL REVIEW

Human Development Index

HDI is a measure to determine the accuracy of a country's social and economic development that uses the fields of education, health, and income as a benchmark for its achievement (Maulina & Andriyani, 2020). The elements that

form HDI explain that the high and low economic growth rate of the country does not represent its low human development. HDI has a function as a country including advanced, developing or underdeveloped as well as for standards in determining the influence of an economic policy on the quality of life.

The concept of human development was first introduced by UNDP in 1990 in a report entitled Human Development Report. It is explained by UNDP that human beings are the wealth of indigenous peoples that place humans as the goal of development (Efendi et al., 2024). Therefore, the main goal is to provide opportunities for the wider community to freely choose the life they want.

The Human Development Index number ranges from 0 to 80. The Human Development Index is categorized as getting better when the value is close to 80. Based on the HDI value, BPS categorizes the human development status of an area into 4 groups, namely:

- <60 : Low HDI
- 60 <70: Medium HDI
- 70<80 : High HDI
- >80 : Very High HDI

Government Spending

Wagner's theory states that the greater the expenditure incurred by the government will cause a large increase in GNP. This theory is based on the basic principle that the government is an individual who has the autonomy to act independently of other groups. This theory is known as the organic theory of the state. Because the government must also control its relationship with the population in terms of health and education, if per capita income increases in an economy, government spending will also increase (Surgawati, 2020).

Peacock and Wiseman's theory focuses on government expenditure receipts. Where the government will try to increase its expenditure by relying on revenue from tax payments. According to this theory, there are 3 effects: the effect of substitution due to social disturbances, which causes private activities to be diverted to government activities; the effect of inspections, which was a government activity after the war; and concentration effect, which is the diversion of private sector activities to government sector activities. (Ridwan & Nawir, 2021).

Economic Growth Theory

Classical economics by Adam Smith in his book "An Inquiry into the nature and Causes of the Wealth of Nation", that the government does not need to carry out economic activities that provide the output of goods and services but that the government's function is only a facilitator that will support the private sector in carrying out development. This means that economic development is influenced by population development. The increase in population will increase productivity and will expand the market. The expansion of the market will give rise to specialization and can develop the economy.

Robert Solow is a professor who introduced the Neo-classical theory of economic growth, explaining that the source of economic growth is from the

value of addition and development of the components of aggregate supply. This can be said to be an improvement of classical theory that only focuses on the relationship between population growth and economic development, while Neo-classical has seen that technological progress can affect economic development (Irawan et al., 2022) .

According to Todaro, the endogenous growth model is similar to the Neo-classical, but there are also differences in theory about marginal returns that are in line with capital investment and allow for an increasing scale of returns in aggregate production. In endogenous theory, it is also explained that each country has differences in the increase in the scale of its results and its long-term growth pattern. In addition, the endogenous growth theory explains that economic growth is influenced by 3 factors, namely population growth and human resource accumulation, the second factor is technological development, and the last factor is the role of the government.

METHODOLOGY

Regeneration Analysis of Panel Data

The study uses multiple linear regression analysis to analyze the influence of government expenditure in the education sector, government expenditure in the health sector, and economic growth on HDI. Also, the researcher also conducted a classical assumption test using the time series analysis method. The purpose of performing the Classical Assumption Test before moving on to the Multiple Linear Analysis stage is to ensure that the regression coefficients are accurate, consistent, and bias-free.

$$HDI = b_0 + b_1BSP + b_2BSK + b_3Pertum.Ek + ui$$

Explanation:

BSP = Education Sector Expenditure

BSK = Health Sector Expenditure

Pertum.Ek = Economic Growth

B = Regression coefficient of the independent variable

ui = error

RESULTS

Classic Assumption Test

Table 1. Normality Test

One-Sample Kolmogorov-Smirnov Test		
Unstandardized Residual		
N		10
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.30285422
Most Extreme Differences	Absolute	.137
	Positive	.107
	Negative	-.137
Test Statistic		.137
Asymp. Sig. (2-tailed)		.200 ^{c,d}
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Based on the test output in the table, it can be concluded that this examination has a *value of Sig.* > of 0.05, it can be concluded as normal distributed data.

Table 2. Multicollinearity Test

Model	Coefficients ^a						Collinearity Statistics
	Unstandardized		Standardized		t	Sig.	
	Coefficients		Coefficients				
	B	Error Std.	Beta				
1 (Constant)	83.745	4.198		19.947	.000		
Belanja Pendidikan	6.938E-8	.000	.596	4.174	.006	.199	5.037
Kesehatan	2.794E-8	.000	.156	1.124	.304	.209	4.786
Pertumbuhan Ekonomi	-2.589	.738	-.317	-3.509	.013	.496	2.017

a. Dependent Variable: IPM

From the data, the conclusion is that each variable of Education Expenditure gets a tolerance value of 0.199 > 0.100 and VIF of 5.037 < 10.00, the variable of Health Expenditure has a tolerance value of 0.209 > 0.100 and VIF 4.786 < 10.00, and Economic Growth has a tolerance value of 0.496 > 0.100 and VIF 2.017 < 10.00, which means that there are no symptoms of multicollinearity.

Table 3. Heteroskedasticity Test

Coefficients ^a						
Model	Unstandardized		Standardized		t	Sig.
	Coefficients		Coefficients			
	B	Std. Error	Beta			
1 (Constant)	7.281	21.535			.338	.747
Belanja Pendidikan	-8.044E-8	.000	-.794		-.944	.382
Kesehatan	5.790E-8	.000	.372		.454	.666
Pertumbuhan						
Ekonomi	-1.808	3.784	-.254		.478	.650

a. Dependent Variable: LN_RES

This test criterion is the Sig value. > 0.05 , there are no symptoms of heteroscedasticity. Each variable has a significance value greater than 0.05, so it can be concluded that there are no symptoms of heteroscedasticity.

Table 4. Autocorrelation Test

	Unstandardized Residual
Test Value ^a	.00014
Cases < Test Value	5
Cases $\geq$ Test Value	5
Total Cases	10
Number of Runs	7
Z	.335
Asymp. Sig. (2-tailed)	.737

a. Median

Based on table 4, the test has a Sig value of > 0.05 meaning the absence of autocorrelation symptoms.

Regression Analysis

Table 5. Determination Coefficient Test (R2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988 ^a	.976	.964	.37092
a. Predictors: (Constant), Pertumbuhan Ekonomi, Kesehatan, Belanja Pendidikan				

Table 6. Test F

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.193	3	11.064	80.420	.000 ^b
	Residual	.825	6	.138		
	Total	34.018	9			
a. Dependent Variable: IPM						
b. Predictors: (Constant), Pertumbuhan Ekonomi, Kesehatan, Belanja Pendidikan						

Table 7. T Test

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1	(Constant)	83.745	4.198	19.947	.000
	Belanja Pendidikan	6.938E-8	.000	.596	4.174 .006
	Kesehatan	2.794E-8	.000	.156	1.124 .304
	Pertumbuhan Ekonomi	-2.589	.738	-.317	-3.509 .013
a. Dependent Variable: IPM					

Results of the Moderated Regression Analysis/MRA Test

In this study, pure moderation is tested using Moderated Regression Analysis (MRA), which is accomplished by creating interaction regressions in which the moderating variable does not serve as an independent variable (Indarto and Ghazali, 2016).

Table 8. Results of the MRA Test with KI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0,065340	0,117495	-0,556110	0,5787
DSI	0,008005	0,059573	0,134379	0,8932
UDS	0,006536	0,010559	0,618962	0,5365
RDS	-0,000767	0,001275	-0,601058	0,5484

KKB	0,044504	0,050357	0,883770	0,3777
KGR	-0,124470	0,135951	-0,915551	0,3609
AAOIFI	0,779377	0,157430	4,950636	0,0000
KI	0,320798	0,130125	2,465307	0,0144
X1_Z1	-0,070488	0,072663	-0,970064	0,3330
X2_Z1	-0,006100	0,012128	-0,502945	0,6155
X3_Z1	0,000772	0,001326	0,582403	0,5609
X4_Z1	-0,056725	0,064866	-0,874502	0,3827
X5_Z1	0,364064	0,156982	2,319140	0,0213
X6_Z1	-0,563086	0,169681	-3,318498	0,0011

DISCUSSION

The Effect of Education Sector Spending on HDI in East Java Province

Based on the results of the tests that have been carried out, it is found that partially Education Sector Expenditure has a significant effect on the Human Development Index in East Java Province in 2014-2023. This is evidenced by a significance value of 0.006 which is less than 0.05. Meanwhile, the value of the education sector spending coefficient has a coefficient of 6.938 which can be interpreted that if education sector spending increases by 1 rupiah, the Human Development Index increases by 6.938 percent.

The increase in education sector spending is generally caused by the budget priorities of a region to improve community welfare according to the conditions and potential of a region as an effort from the government through the improvement of education, health, social facilities and public facilities. The allocation of funds for education expenditure includes government expenditure based on the largest function. Education is one of the important elements in the creation of HDI (Knowledge). Increased education sector spending can be allocated to improving the general competence of teachers and language speakers with the aim of improving the quality and productivity of the workforce. With higher education will improve the quality of better individuals and the higher the level of education of the individual, the more knowledge and can quickly absorb renewable technology.

The results in this study are in accordance with the theory of human capital which states that education is the main factor that can produce a highly productive society. By investing in the field of education, individuals will be able to manage resources optimally and can improve development results and be competitive.

Referring to the East Java Province BPS report, education sector spending is the second largest expenditure of 99.30% of the expenditure allocation. The number of long-term school expectations from 2021-2023 has increased continuously. The long-term expectation rate for school in 2021 is 13.36 years and in 2022 it will reach 13.37. This shows an increase in the expectation of school age by 0.01 years. In addition, the East Java Provincial Government has created a program to pursue vocational packages A, B, and C with the aim of providing support for the development of individual quality to the community, especially to groups that cannot reach quality education. So that this can lead to an increase in HDI through education.

This study has similarities with (Hasibuan et al., 2023) with the result that education sector spending has a positive and significant effect on HDI.

The Effect of Health Sector Spending on HDI in East Java Province

Based on the results of the tests carried out, it was found that partially Health Sector Expenditure did not have a significant effect on the Human Development Index in East Java Province in 2014-2023. This is evidenced by a significance value of 0.304 which is greater than 0.05. Meanwhile, the value of the health sector expenditure coefficient has a coefficient value of 6.794 which can be interpreted that if health sector expenditure increases by 1 rupiah, the Human Development Index has increased by 6.794.

In general, the allocation of spending in the health sector is the role of the government. The existence of a spending allocation for the health sector can make it easier for people to get access to health services so that it will meet the needs of the community in the health sector. Fulfillment in the health sector will provide an improvement in the quality of human development. However, if the allocation of health sector spending is not carried out optimally, it cannot make the quality of health better and will reduce people's productivity.

In East Java Province, health sector spending has increased every year. Increased spending in the health sector will lead to an increase in HDI. But basically, an increase in health sector spending can have an impact on increasing HDI, but it doesn't necessarily lead to an increase in HDI. This can happen due to several factors, including that there is an inequality in the number of health facilities in several cities in East Java. With the limited health facilities provided, it will make it difficult for people to reach health facilities which will reduce a person's life expectancy which is an indicator of HDI.

The results of this study are not in accordance with the theory initiated by Adolf Wagner who argued that increasing government spending does not increase government activities in a certain period of time.

This research is in line with (Aulia et al., 2023) which proves that health sector spending does not have a significant effect on HDI. One of the reasons given is that the mandate of the law has not been fulfilled where the health budget of the Provincial and Regency/City governments is at least 10 percent of the APBD outside salaries.

The Effect of Economic Growth on HDI in East Java Province

Based on the results of the tests that have been carried out, it is found that partially Economic Growth has a significant effect on the Human Development Index in East Java Province in 2014-2023. This is evidenced by a significance value of 0.013 which is less than 0.05. Meanwhile, the value of the Economic Growth coefficient has a coefficient value of -2.589.

Economic growth is generally caused by the availability of a number of resources and the efficiency of the use of production factors. However, to know that an area has high growth cannot be seen only from the amount of human capital and natural resources because of the need for adequate technology and infrastructure in an area that can facilitate community activities. East Java has a

natural landscape at the tip of the island of Java starting from mountainous areas, beaches, seas, forests and agricultural land that can have great potential as natural resources. The existence of a number of these resources brings challenges on how these natural resources can have a positive impact and provide added value to the economy of the people of East Java. In maximizing the use of available resources, infrastructure is built that can support economic activities and can have an impact on the economy. So it can be said that the output of economic growth is not only focused on improving the quality of human life, but also as other interests such as improving infrastructure.

This result is not in line with the neo-classical theory that the development of capital stock can affect economic development. So it can be interpreted that economic growth does not only come from labor and physical capital factors, but with the increase in resources and the right allocation and its widespread distribution will encourage human development.

These findings are in line with research (Amelinda & Rachmawati, 2022) which concluded that economic growth has a negative and significant effect on HDI. This is because economic growth in the East Java region does not directly affect the human development index and does not only focus on the results of economic growth on human development.

CONCLUSIONS AND RECOMMENDATIONS

1. Education sector spending affects the Human Development Index in East Java Province because East Java Province carries out mandatory spending of 20% of the APBD for the education sector, by carrying out this mandate East Java Province fully supports education development
2. Health sector spending does not have a significant influence on the Human Development Index in East Java Province.
3. Economic Organizations have a negative and significant effect on the Human Development Index in East Java Province.
4. Education sector spending, health sector spending, and economic growth have a simultaneous effect on the Human Development Index in East Java Province.

FURTHER STUDY

A deeper study is needed on the allocation of health expenditure by the government, which is the sector that forms the Human Development Index, because stunting interventions in infants in the East Java region are still relatively high.

ACKNOWLEDGMENT

Praise be to God Almighty for all His mercy and guidance so that the author can complete this journal. The author realizes that the preparation of this thesis is still far from perfect, therefore, constructive suggestions and criticisms are very much hoped for by the author. Hopefully this final work can be useful for all of us.

REFERENCES

- Angkat, S. S. (2023). Pengaruh Indeks Gini Rasio, Indeks Kemahalan Konstruksi, Pengeluaran Perkapita Terhadap Indeks Pembangunan Manusia (IPM) *a. *Jurnal Ekonomi Regional Unimal*, 06(2), 13–21. https://ojs.unimal.ac.id/ekonomi_regional
- Efendi, B., Nasution, D. P., Rusiadi, & Pratiwi, D. (2024). *TEORI INDEKS PEMBANGUNAN MANUSIA DAN PERTUMBUHAN EKONOMI* (M. Jannah, Ed.). PENERBIT TAHTA MEDIA GROUP.
- Hasibuan, S. A., & Syahbudi, M. (2022). PENGARUH PENGELUARAN PEMERINTAH BIDANG PENDIDIKAN TERHADAP INDEKS PEMBANGUNAN MANUSIA. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah*, 7(4), 1158–1166. <https://doi.org/10.30651/jms.v7i4.13218>
- Irawan, A., Program, A. A., & Pembangunan, S. E. (2022). Pengaruh Pertumbuhan Ekonomi Terhadap Indeks Pembangunan Manusia di Provinsi Sumatera Selatan Tahun 2016-2020. *JURNAL KLASSEN*, 2(1).
- Laode, M., Engka, D. S. M., & Sumual, J. I. (2020). ANALISIS PENGARUH PERTUMBUHAN EKONOMI, KEMISKINAN DAN PENGELUARAN PEMERINTAH SEKTOR PENDIDIKAN TERHADAP INDEKS PEMBANGUNAN MANUSIA DI PROVINSI SULAWESI UTARA (2015-2018). *Jurnal Berkala Ilmiah Efisiensi*, 20(2), 58–67.
- Maulina, U., & Andriyani, D. (2020). Pengaruh Pengeluaran Pemerintah Sektor Pendidikan, Kesehatan Dan TPAK Terhadap IPM Di Indonesia. *Jurnal Ekonomika Indonesia*, 11(1), 28–37. <https://doi.org/https://doi.org/10.29103/ekonomika.v9i1.3171>
- Ridwan, & Nawir, M. F. (2021). *Buku Ekonomi Publik*. Pustaka Pelajar (ANGGOTA IKAPI).
- Rifa, A. L., & Waluyo, A. (2023). Pengaruh Tenaga Kerja, Indeks Pembangunan Manusia dan Upah Minimum terhadap Kemiskinan dengan Zakat sebagai Variabel Moderasi di Provinsi Jawa Tengah Tahun 2017-2020. *EKOMAKS: Jurnal Ilmu Ekonomi, Manajemen Dan Akuntansi*, 12(2), 290–298. <https://doi.org/https://doi.org/10.33319/jeko.v12i2.132>
- Sari, G. K. (2024). Peran PBB Melalui MDGs Dalam Peningkatan Indeks Pembangunan Manusia di Indonesia. *Journal of Multidisciplinary Research and Development*, 1(2), 102–107. <https://doi.org/10.56916/jmrd.v1i2.727>
- Setiawan, A., & Fikriah. (2020). *PENGARUH BELANJA PEMERINTAH BIDANG PENDIDIKAN, KESEHATAN DAN PERLINDUNGAN SOSIAL*

TERHADAP INDEKS PEMBANGUNAN MANUSIA DI INDONESIA. 5(4), 212–221.

Surgawati, I. (2020). Pengeluaran Pemerintah Dan Pertumbuhan Ekonomi: Hipotesis Keynes Versus Teori Wagner. *WELFARE:JURNAL ILMU EKONOMI*, 1(1), 25–34. <http://jurnal.unsil.ac.id/index.php/welfare>

Wardhana, A., Kharisma, B., & Sulandari, D. S. (2021). Belanja Pemerintah dan Peningkatan Sumber Daya Manusia di Indonesia. *Jurnal Ecodemica Jurnal Ekonomi Manajemen Dan Bisnis*, 5(2), 139–151. <https://doi.org/10.31294/eco.v5i2.10168>