

The Effect of Economic Growth, Government Spending, and Human Development Index toward Inequality of Income Distribution in the Metropolitan Cities in Indonesia

Alfath Shifa Ghifara*, Akhmad Kusuma Wardhana, Achmad Nur Iman, Sulistya Rusgianto, & Ririn Tri Ratnasari

Department of Islamic Economy, Faculty of Economic and Business, Universitas Airlangga (60286), Indonesia

Abstract

This study aims to determine and analyze the influence of economic growth, government capital expenditure, and human development index on the inequality of income distribution in Metropolitan Cities in Indonesia. This type of research is descriptive associative research, where the data used is secondary data from 2012 to 2021 obtained from relevant agencies, which were analyzed using the panel data regression method. The findings of this study indicate that the human development index has a negative and significant effect on the inequality of income distribution in Metropolitan Cities in Indonesia, capital expenditures and economic growth have a positive and insignificant effect on the inequality of income distribution in Metropolitan Cities in Indonesia. Taken together, only the human development index has a significant effect on the inequality of income distribution in Metropolitan Cities in Indonesia.

Keywords: Capital expenditure, economic growth, income inequality distribution, human development index.

1. Introduction

Inequality is one aspect that is considered in achieving the level of welfare. Reducing inequality is one of the focuses that all countries in the world want to achieve. With equal distribution of income, everyone will get the same amount of income. One way to reduce income inequality is by implementing economic development (Irawan & Santoso, 2019). Economic development is a process that causes the income per capita of the population or society to increase in the long term. Therefore, there is a need for sustainable and well-executed economic development so as to encourage economic growth and reduce unequal income inequality (Agusalim & Pohan, 2018).

Aspects of economic inequality and economic indicators to measure the level of economic inequality is the Gini Index (Gini Ratio). Ironically, the Gini index is included in the category of moderate inequality that occurs in the 5 largest metropolitan cities in Indonesia, namely Jakarta, Surabaya, Medan, Bandung, and Semarang. The Gini index is an indicator of the level of inequality in income distribution where the coefficient value ranges from 0 to 1, which means that if the coefficient value is closer to 1, it is categorized as the largest inequality so that it can be said to be the worst level of inequality in the economy (Irawan & Santoso, 2019).

Table 1. Income Inequality in the 5 Largest Metropolitan Cities in Indonesia 2019-2021 (Gini Index)

City	2019	2020	2021
Jakarta	0,39	0,40	0,41
Surabaya	0,37	0,34	0,34
Medan	0,35	0,32	0,40
Bandung	0,44	0,40	0,43
Semarang	0,33	0,33	0,35

* Corresponding author.

E-mail address: alfathshifasisi@gmail.com

Based on table 1, income inequality that occurs in the 5 largest metropolitan cities in Indonesia has increased and decreased in the past 3 years. The Gini ratio in the City of Jakarta has increased every year, where in 2019 it was 0.39 then increased to 0.41 in 2021. Meanwhile, in Surabaya, the level of inequality has decreased, where initially in 2019 it was 0.37 and then decreased. to 0.34 in 2021. Medan city has increased by 0.35 in 2019 to 0.40 in 2021. In addition, the city of Bandung has a fairly high level of inequality compared to the other four cities of 0.44 in 2019 then decreased to 0.40 in 2020 and increased again in 2021 by 0.43. Finally, the city of Semarang experienced a similar increase, namely by 0.33 in 2019 then reaching 0.35 in 2021.

There are several things that cause income inequality to occur, namely the inequality of development in each region, the budget issued by each local government in carrying out development, and population growth, giving rise to a new thing, namely increasing unemployment (Zulaikha et al., n.d.). The government spending in carrying out development in each region varies as follows.

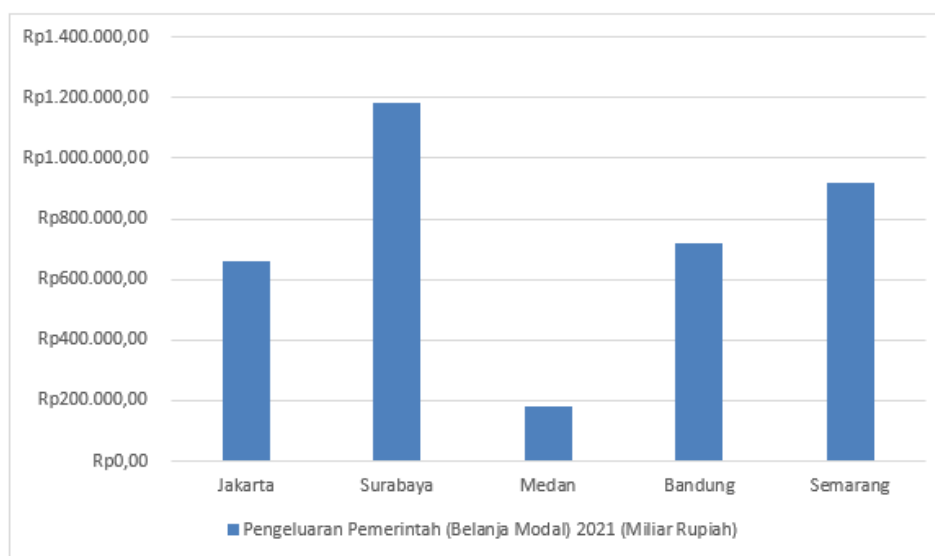


Fig 1 . Government spending in Billion rupiahs (2021)

Based on figure 1, it can be seen that the government of each city spends different budgets in carrying out development. The Surabaya City Government issued the highest capital expenditure of the four other cities, amounting to Rp 1,184,939.19. The Medan city government spends a minimum of Rp 178,910.00 for capital expenditure. In other words, the government has a very important role in carrying out development as a catalyst and facilitator. The development can be through the budget where government spending is partly used to carry out development in various types of infrastructure (Kurniati et al., 2018).

Another factor that can influence the occurrence of inequality in income distribution is the Human Development Index (HDI). The Human Development Index that is not evenly distributed between regions will cause regions that have a higher HDI to prove that the region has good quality human resources so that it can encourage economic growth in the area. And vice versa, where the region has a low HDI level, it will be one of the inhibiting factors in economic growth. An increase in HDI in an area that is not accompanied by an increase in HDI in other areas will trigger an inequality in income distribution (Shah, 2016).

Based on the phenomena that occur based on the description of the data above, the authors are interested in conducting research related to the effect of economic growth, government spending and the level of the human development index on the inequality of income distribution in the 5 largest metropolitan cities in Indonesia.

2. Literature Review

2.1. Income Distribution Inequality

In analyzing inequality, measurements can be made using the Gini Index coefficient which is a measure of aggregate inequality from a value range of zero to 1. Kurtetz stated that economic growth in developing countries tends to lead

to very high levels of poverty and income inequality (Mubarrok et al., 2020). This is explained in the inverted U hypothesis by Simon Kuznets, where if there is a movement in development, then the inequality of income distribution will be more uneven, but if it is at a certain point then income will be more evenly distributed. Basically inequality occurs due to differences in several aspects such as the quality of human resources, natural resources, and differences in the demographic structure of each region. Sirojuzilam (2010) states that the characteristics in Indonesia are very diverse so that they have a strong influence on the creation of economic development, so it is not surprising that there are differences in development patterns. HDI and income distribution inequality also have a relationship with each other (Putri & Mintaroem, 2020). Therefore, with these differences, this becomes an impetus for a different development.

2.2. *Human Development Indeks (HDI)*

The concept of the Human Development Index (HDI) or the Human Development Index (IPM) was first put forward by the United Nations Development Program in 1990 (Herianingrum et al., 2019). The Human Development Index is an aggregate indicator to measure people's welfare that focuses on basic abilities or central human functional abilities which are part of all abilities and are the determinants of human survival in life (Anto, M., 2013). According to UNDP in 1990, the Human Development Index has two sides, the first is related to human abilities such as health and knowledge, while on the other side is the use of these acquired abilities for productive purposes such as in social, cultural and political activities (Almasi-Hashiani et al., 2016).

2.3. *Government Spending*

According to the Minister of Home Affairs No. 13 of 2006, regional expenditures are all regional obligations that are recognized as a reduction in the value of net assets in the period of the relevant fiscal year. Regional expenditures associated with work programs and activities are categorized into two types, namely direct expenditures and indirect expenditures. Included in the direct expenditure category are personnel expenditures, goods and services expenditures, and capital expenditures (Kashif et al., 2019). Indirect expenditures are budgeted expenditures that are not directly related to the implementation of programs and activities. These were Included in the indirect expenditure category are personnel expenditures (salaries, allowances, and representation money), subsidy expenditures, interest expenditures, grants expenditures, social assistance expenditures, profit sharing expenditures, financial aid expenditures, and unexpected expenditures. Regional spending aims to advance the region and prosper the community (Faizah & Husaeni, 2018).

2.4. *Economic Growth*

Economic growth indicates an increase in the economic capacity of a region within a certain time. To measure economic growth, the concept of GRDP at the Provincial/District/City level can be used. According to Adam Smith, there are two main aspects of economic growth, namely (1) total output growth and (2) population growth (Ratnasari et al., 2020). These two main aspects are related to each other. Where the growth of total output, in terms of the production system consists of three main elements, namely natural resources, human resources, and the existing stock of capital goods. Economic growth is also influenced by several important factors, namely capital accumulation, population growth, and technological progress (Pratiwi et al., 2022). However, the emphasis on regional economic growth is focused on differences in regional characteristics of economic growth. According to Robinson Taringan (2006), the main important factors in regional economic growth are location advantage, migration agglomeration, and capital traffic flows between regions. Therefore, each region has a different level of economic growth.

2.5. *Previous Research and Hypothesis*

Several previous studies have discussed the effect of the human development index, government spending, and economic growth on the inequality of income distribution. Anggina and Artaningtyas (2017) examined the effect of economic growth and the human development index on income distribution inequality in the Special Region of Yogyakarta from 2007 to 2014. The results show that economic growth has no significant effect on income distribution inequality. Meanwhile, the human development index has a significant positive effect on the inequality of income distribution (Sinaga, 2020).

Nangarumba (2015) examined the effect of capital expenditures on the inequality of income distribution in all provinces of Indonesia in the period 2005 to 2014. The results show that capital expenditures have a significant negative relationship to income distribution inequality. In addition, Ansari et al. (2018) examines the effect of capital expenditure on income distribution inequality in all provinces in Indonesia. The results show that capital expenditure has a positive and significant effect on the inequality of income distribution (Bahmani-Oskooee & Ardakani, 2020).

On the other hand, Hariani (2019) examines the effect of HDI on the inequality of income distribution in East Java Province. The results show that the human development index has a positive and significant effect on the inequality of income distribution. However, research conducted by Nurhuda (2013) in East Java Province had different results. Where the results show that the human development index has a negative and significant effect on the inequality of income distribution.

In the following year, study by (Barata, 2019) examined the determinants of income inequality in Indonesia, where there were independent variables used, namely the human development index, economic growth and local government spending. The results show that the human growth index and local government expenditures have a significant positive effect on income distribution inequality, while economic growth has a significant and negative effect on income distribution inequality (Iman et al., 2022).

In the same year, Kiak (2020) examined capital expenditure, the human development index, and economic growth on the inequality of income distribution between regions in East Nusa Tenggara Province. The results show that capital expenditure and human development index have no significant effect on income distribution inequality. Meanwhile, economic growth has a significant effect on the inequality of income distribution.

Based on the background, literature review, and previous research above, the hypothesis for this research can be formulated as follows.

H1: Human Development Index has a positive and significant effect on Inequality of Income Distribution

H2: Government Expenditure has a positive and significant effect on Inequality in Income Distribution

H3: Economic Growth has a positive and significant effect on Inequality of Income Distribution

When described in the analysis model, it can be seen in the figure 2.

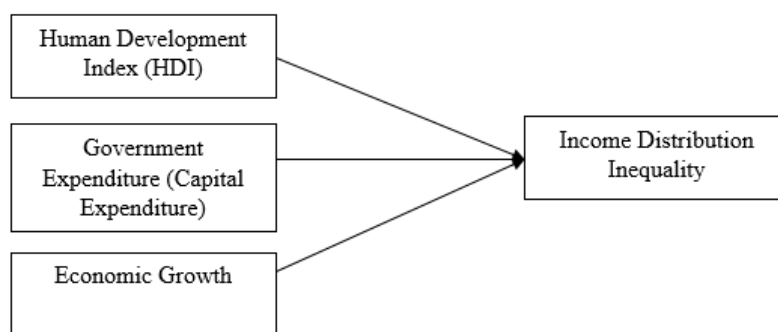


Figure 2. Analysis Model

3. Research Method

This study uses a quantitative research approach. The reason the author uses a quantitative approach is because it aims to re-examine the theory or previous research and analyze the results by deductive reasoning (Bungin, 2005). On the other hand, according to (Bryman, 2006), quantitative research is used to examine data processed with statistical tools and test predetermined hypotheses.

This study uses endogenous variables, namely the Gini index (gini ratio) as a proxy for inequality in income distribution and exogenous variables using capital expenditures by local governments as a proxy for government spending, GRDP as a proxy for economic growth and the human development index (IPM). The research period in this study starts from 2012 to 2021, adjusted to the availability of data. The population in this study are the 5 largest metropolitan cities in Indonesia (Brynjolfsson et al., 2018).

The data analysis technique in this study uses panel data regression with Eviews 12 software. According to Gujarati and Porter (2013), panel data has the same cross-sectional data unit over a certain period of time. When described in the equation of the econometric model in this study, it will appear as follows:

$$GI_{it} = 1 + 2LNGRDP_{it} + 3LNCAPEX_{it} + 4HDI_{it} + u_{it}$$

The initial stage of this research is to test the panel data estimation model where in Gujarati & Porter (2013) states the Hausman Test to test the choice between the FEM (Fixed Effect Model) and REM (Random Effect Model) models. Then after selecting which model is the best to use in panel data regression, then the t hypothesis test of the regression model is carried out.

4. Results and Discussions

4.1. Chow Test Results

The Chow test was conducted to select the model between the Fixed Effect Model or the Common Effect Model to be used. If the Chi-Square Probability shows less than 5 percent alpha (0.05), then H0 is rejected. And if the Chi-Square Probability shows more than 5 percent alpha (0.05) then H0 cannot be rejected. The results of the estimation using the Chow test are as follows on table 2.

Table 2. Chow Test

Effects Test	d.f.	Prob.
Cross-section F	(4,42)	0.0000
Cross-section Chi-square	4	0.0000

Based on the Chow test, the two probability values of Cross Section F and Chi Square are smaller than alpha 0.05, thus rejecting H0 and accepting H1. It can be concluded that the best model used is the model using the Fixed Effect Model method. Based on the results of the Chow test which rejects H0, then the data testing continues to the Hausman test.

4.2. Hausman Test Results

According to Gujarati & Porter (2013), to choose a random effect or fixed effect estimation model, the Hausman test can be used. The following are the results of the Hausman test in table 3.

Table 3. Hausman Test

Correlated Random Effects – Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.284210	3	0.5156

Referring to Gujarati & Porter (2013), based on the results of the Hausmann test above, the value of Probability score of 0.5156, where this number is above the significant value of 0.05, so it can be interpreted that the random effect model is better than the fixed effect model. Based on these results, the next panel data regression analysis will use the random effects model.

4.3. Lagrange Multiplier Test Results

This lagrange multiplier test is used to compare the common effect model and the random effect model. If the Chi-Square probability value is more than 0.05 then H0 is accepted and H1 is rejected, this means that the model chosen is the common effect model. If the opposite happens, namely the Chi-Square probability value is less than 0.05, then H0 is rejected and H1 is accepted, which means that the selected model is a random effect model.

Based table 4, the results of the lagrange multiplier test show the prob value. Breusch-Pagan cross-section 0.0000 is smaller than alpha 0.05 then H1 is accepted then the model to be used is the random effect model.

Table 4. Lagrange Multiplier Tests

Lagrange Multiplier Tests for Random Effects	
	Test Hypothesis Cross-section
Breusch-Pagan	91.67032 (0.0000)

4.4. Panel Data Regression Test Results

The results of the panel data regression test using a random effect model of the influence of economic growth, government spending, and HDI on income distribution inequality can be seen in table 5.

Table 5. Random Effect Model

Dependent Variable: GI				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.726882	0.227261	3.198453	0.0025
HDI	-0.006613	0.002845	-2.324751	0.0246
LNCAPEX	0.002800	0.004724	0.592717	0.5563
LNGRDP	0.011681	0.018539	0.630089	0.5318

Based on table 5, it can be seen that the coefficient for the independent variable of the human development index (HDI) is 0.006613 where it has a negative effect and the probability level. at 0.0246 (below 0.05) so that the negative effect is significant on the level of inequality of income distribution proxied by the Gini Ratio, meaning that in this study H1 is accepted where an increase in the level of the human development index will reduce the level of inequality in income distribution. On the other hand, the coefficient for government spending is actually positive at 0.002800 towards the inequality of income distribution with the prob level. 0.5563, where the number is more than 0.05 so that the effect is not significant. Because of these results, it can be interpreted that H2 is rejected in this study. The coefficient for positive economic growth at 0.011681 on the inequality of income distribution with the level of prob. 0.5318, where the lift is more than 0.05 so that the effect is not significant. So in this study H3 was rejected. When described in the regression equation model it will look like this:

$$\text{Inequality of Income Distribution} = 0.7268 - 0.006 \text{ Human Development Index} + 0.002 \text{ Government Expenditure} + 0.0118 \text{ Economic Growth}$$

4.5. Discussion

Based on the results for the human development index of the 5 largest metropolitan cities in Indonesia, namely Jakarta, Surabaya, Medan, Bandung, and Semarang, it can be seen that it shows a significant negative relationship to inequality in income distribution. This is in line with the findings of Nurhuda (2013) showing that the human development index has a negative and significant effect on inequality in income distribution. In this case, it can be analyzed that with an increase in the human development index this will reduce the level of inequality in income distribution. Human resources are one of the important factors in encouraging economic growth which will create community welfare so that it can reduce the level of inequality in the distribution of income (Bahmani-Oskooee & Ardakani, 2020). One of the important concerns is the existence of advantages in areas where access to all information, infrastructure, and needs can be obtained easily. Jakarta, Surabaya, Medan, Bandung and Semarang are the 5 largest metropolitan cities in Indonesia where people will find it easier to get facilities to improve their quality (Barkah et al., 2022).

Government spending (capital expenditure) shows a positive and insignificant relationship to the inequality of income distribution. This finding is in line with Kiak (2020) that government spending on capital expenditure does not have a significant effect on income distribution inequality. In this case, it can be analyzed that capital expenditures are issued to increase economic development in order to reduce the level of inequality in the distribution of income in each region equally (Rahman et al., 2022). According to Karl Mark, at each initial stage of development there will be an increase in the workforce. Where when there is an increase in the demand for labor, it will be followed by an increase in the level of wages. This will affect the increase in capital expenditure for labor so that there will be a decrease in labor (Brunkhorst, 2020). If there is a decrease in the workforce, this will lead to a return to inequality in the

distribution of income. Where these 5 metropolitan cities are also among the 5 largest cities that are target cities for unemployed people to find work, so that with the large demand for labor it will increase the level of company expenditure which is followed by an increase in the wage level (Juliansyah et al., 2021).

Economic growth shows a positive and insignificant relationship to the inequality of income distribution. This finding is in line with Anggina & Artaningtyas (2017) that economic growth has no significant effect on inequality in income distribution. In this case, it can be analyzed that the higher the level of economic growth, this has not been able to provide an impetus in reducing the level of inequality in income distribution in the 5 metropolitan cities. The absence of the effect of economic growth on the inequality of income distribution is due to uneven economic growth in which only certain regions or a group of rich people are present (Taiwo & Olalekan, 2021). This can mean that economic growth is only felt or can be used by the upper class (rich) only so that existing developments are not followed by other areas which can encourage inequality in income distribution. (Febriyanti et al., 2022).

5. Conclusion

Based on the results of panel data analysis and the discussion that has been described, there is one variable that has a negative and significant effect on the Inequality of Income Distribution, namely the Human Development Index. Variables of Economic Growth and Government Expenditure (Capital Spending) have a positive and insignificant effect on the Inequality of Income Distribution in the 5 Largest Metropolitan Cities in Indonesia.

The implication of this research is that it can be a consideration for local governments in taking policy steps in building the quality of human resources and increasing government spending (capital expenditures) so that they can have an influence on economic growth in order to reduce the inequality of income distribution that occurs.

References

- Agusalim, L., & Pohan, F. S. (2018). Trade Openness Effect on Income Inequality: Empirical Evidence from Indonesia. *Signifikan: Jurnal Ilmu Ekonomi*, 7(1), 1–14. <https://doi.org/10.15408/sjie.v7i1.5527>
- Almasi-Hashiani, A., Sepidarkish, M., Vesali, S., & Omani Samani, R. (2016). The correlation of human development index on fertility and mortality rate: a global ecological study. *International Journal of Pediatrics*, 4(12), 4071–4080.
- Anto, M., H. (2013). Introducing an Islamic Human Development Index (I-HDI) to Measure Development in OIC Countries. *Islamic Economic Studies, Vol. 19 No.2, Life 1*, 69–95.
- Bahmani-Oskooee, M., & Ardakani, A. (2020). Does GINI respond to income volatility in an asymmetric manner? Evidence from 41 countries. *Economic Systems*, 44(2), 100756. <https://doi.org/10.1016/j.ecosys.2020.100756>
- Barata, A. (2019). STRENGTHENING NATIONAL ECONOMIC GROWTH AND EQUITABLE INCOME THROUGH SHARIA DIGITAL ECONOMY IN INDONESIA. *Journal of Islamic Monetary Economics and Finance*, 5(1), 145–168.
- Barkah, T., Rusgianto, S., & Wardhana, A. (2022). Impact of Agricultural Land and the Output of Agricultural Products Moderated with Internet Users toward the Total export of Agricultural Product in Three Islamic South East Asian Countries. *Media Agribisnis*, 6(1 SE - Articles). <https://doi.org/10.35326/agribisnis.v6i1.2261>
- Brunkhorst, H. (2020). A Marxist Educated Kant: Philosophy of History in Kant and the Frankfurt School. *Kantian Review*, 25(4), 515–540.
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative Research*, 6(1), 97–113.
- Brynjolfsson, E., Diewert, W. E., Eggers, F., Fox, K. J., & Gannamaneni, A. (2018). The Digital Economy, GDP and Consumer Welfare: Theory and Evidence. *ESCoE Conference on Economic Measurement, Bank of England*, 16–17.
- Faizah, S. I., & Husaeni, U. A. (2018). Development of Consumption and Supplying Energy in Indonesia's Economy. *International Journal of Energy Economics and Policy*, 8(6), 313–321.

- Febriyanti, A. R., Ratnasari, R. T., & Wardhana, A. K. (2022). The Effect of Economic Growth, Agricultural Land, and Trade Openness Moderated By Population Density on Deforestation in OIC Countries. *Quantitative Economics and Management Studies*, 3(2).
- Iman, A. N., Sukmana, R., Ghifara, A. S., & Wardhana, A. K. (2022). The Effect of Zakat Collection, Company Age, and Company's Total Assets on Financial Performance of Sharia Banking in Indonesia 2019-2020. *Economic Education and Entrepreneurship Journal*, 5(2), 217–224.
- Irawan, A., & Santoso, E. B. (2019). Analytical tools beyond Gini index to study inequality: a case of City of Blitar, East Java, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 340(1), 12004.
- Juliansyah, A. F., Putri, A. E., Suryadana, M. L., Endyana, C., & Wardhana, A. K. (2021). Global Muslim Response to Bandung Halal Tourism Branding. *International Journal of Applied Sciences in Tourism and Events*, 5(2), 197–206. <https://doi.org/https://doi.org/https://doi.org/10.31940/ijaste.v5i2.197-206>
- Kashif, M., Menoncin, F., & Owadally, I. (2019). Optimal portfolio and spending rules for endowment funds. *Review of Quantitative Finance and Accounting*, 1–23.
- Kurniati, P. S., Suryanto, S., & Anggadani, S. D. (2018). Model of Financing Infrastructure Development In Bandung, West Java, Indonesia. *International Conference on Business, Economic, Social Science and Humanities (ICOBEST 2018)*.
- Mubarrok, U. S., Ulfi, I., Sukmana, R., & Sukoco, B. M. (2020). A bibliometric analysis of Islamic marketing studies in the “journal of Islamic marketing.” *Journal of Islamic Marketing*.
- Pratiwi, A. C., Wardhana, A. K., & Rusgianto, S. (2022). Application of Vector Error Correction Model on Macroeconomic Variables toward Changes in the Composite Stock Price Index. *Daengku: Journal of Humanities and Social Sciences Innovation*, 2(2), 219–229.
- Putri, R. M., & Mintaroem, K. (2020). Determinan Islamic Human Development Index (Ihdi) Provinsi Jawa Timur Tahun 2001-2016. *Jurnal Ekonomi Syariah Teori Dan Terapan*, 6(7), 1410. <https://doi.org/10.20473/vol6iss20197pp1410-1420>
- Rahman, I., Ratnasari, R. T., & Wardhana, A. K. (2022). Effect of Certificate of Bank Indonesia Sharia and Indonesian Bank Seven Days Repository Rate to Inflation Ratio in Indonesia During Covid-19 Pandemic. *Economic Education and Entrepreneurship Journal*, 5(1), 157–174.
- Ratnasari, R. T., Gunawan, S., Mawardi, I., & Kirana, K. C. (2020). Emotional experience on behavioral intention for halal tourism. *Journal of Islamic Marketing*, 12(4), 864–881.
- Shah, S. (2016). Determinants of Human Development Index: A Cross-Country Empirical Analysis. *International Journal of Economics and Management Studies*, 3(5), 43–46. <https://doi.org/10.14445/23939125/ijems-v3i5p106>
- Sinaga, M. (2020). Analysis of Effect of GRDP (Gross Regional Domestic Product) Per Capita, Inequality Distribution Income, Unemployment and HDI (Human Development Index) on Poverty. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 3(3), 2309–2317.
- Taiwo, A., & Olalekan, O. C. (2021). Trade openness, institutions and economic growth in Sub-Saharan Africa. *Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah*, 8(6), 541–560. <https://doi.org/10.22437/ppd.v8i6.10653>
- Zulaikha, S., Hendratmi, A., Sridadi, A. R., Basit, A., Iman, A. N., Wardhana, A. K., Ghifara, A. S., Pratiwi, A. C., Febriyanti, A. R., & Nugroho, A. D. (n.d.). *FILSAFAT EKONOMI ISLAM Menjawab Tantangan Peradaban*. Zifatama Jawara.