SINOMICS JOURNAL
International Journal of Social Science, Education, Communication and Economics
ISSN (e): 2829-7350 | ISSN(p): 2963-9441

The Effect of Village Funds, Labor Force Participation Rate, and Average Years of Schooling on Per Capita Income in Underdeveloped Regions of Sumatra Island

Deffa Lionanta[1], Taher[2]
University of Lampung, Indonesia
Email: deffalionanta@gmail.com[1], arivina.ratih@feb.unila.ac.id[2]

Abstract

This study analyzes the effect of Village Funds, the Labor Force Participation Rate (LFPR), and Average Years of Schooling (AYS) on per capita income in underdeveloped regions of Sumatra Island. Underdeveloped regions in Indonesia continue to face significant challenges in improving the welfare of their populations, with factors such as Village Funds, labor force participation, and education playing crucial roles in poverty alleviation. This research uses secondary data from Statistics Indonesia (BPS) and related institutions, employing regression analysis to examine the impact of these variables on per capita income. The results indicate that Village Funds and the Labor Force Participation Rate have a significant positive impact on per capita income, while Average Years of Schooling has a smaller but still significant effect. These findings provide valuable insights for policymakers in formulating development strategies aimed at improving welfare in underdeveloped areas. Approaches that involve more effective management of Village Funds, improving education quality, and enhancing labor force participation can serve as strategic steps to address economic disparities across regions in Sumatra Island.

Keywords: Village Funds, Labor Force Participation Rate, Average Years of Schooling, Per Capita Income, Underdeveloped Regions, Sumatra Island.

INTRODUCTION

The pattern of economic activity and the pattern of national development in each region in Indonesia have diverse characteristics. This is due to differences in the resource potential of each region (House of Representatives of the Republic of Indonesia (DPR RI), 2020). This difference in resource potential has led to development inequality between regions. This regional imbalance problem is felt by regions outside Java (National Development Planning Agency (BAPPENAS), 2020). There are regions that are classified as advanced and fast growth, but many regions have slower growth, which are called underdeveloped regions. According to presidential regulation No. 63/2020 on the determination of underdeveloped regions for 2020-2024, despite the advantages of the island of Sumatra, it is still the island that has the highest number of provinces with underdeveloped regions in Indonesia.

Table 1. Distribution of Provinces Across Indonesian Islands

Island	Number of Provinces
Sumatera	6 Province
Kalimantan	5 Province
Sulawesi	5 Province
Jawa	2 Province

Papua	2 Province

As explained above, one of the main objectives to be achieved in the context of developing underdeveloped regions is of course the improvement of the regional economy. The improvement of an economy can be seen from the size of the Gross Regional Domestic Product (GRDP) at constant prices, GRDP is the added value of products and services (Sukirno, 2019). GRDP per capita at constant prices is useful for measuring income per person in a region. The economy is said to have increased if the real income of individuals in one year is greater than the real income of individuals in the previous year.

Per capita income in different districts from 2017 to 2021. In general, there is a gradual increase in almost all districts, although there are some fluctuations. Mentawai Islands Regency has the highest per capita income, ranging from IDR 30.91 million in 2017 to IDR 34.27 million in 2021, while Nias Selatan and Lampung Barat recorded the lowest per capita income. Aceh Singkil experienced an increase from IDR 17.8 million in 2017 to IDR 21.13 million in 2021. Nias and North Nias also showed a moderate upward trend, reaching IDR 17.83 million and IDR 16.09 million respectively in 2021. Meanwhile, South Nias declined to IDR 11.79 million in 2021. West Pasaman recorded stable growth from IDR 24.3 million to IDR 26.72 million, and West Lampung experienced a slight increase from IDR 15.11 million to IDR 16.55 million.

Village funds originate from the State Budget which is channeled directly into village treasuries in line with the government's pro-poor growth program (BAPPENAS, 2020). The purpose of village funds is to fulfill the needs of village development, and community empowerment (Kolaborasi Masyarakat dan Pelayanan untuk Kesejahteraan (KOMPAK), 2017). The allocation of village funds in 10 districts on the island of Sumatra has fluctuated. The districts of Aceh Singkil, Nias, North Nias and Mentawai Islands show a moderate trend with gradual increases each year, but overall the values in these districts are still smaller than the labor force participation rate value in South Nias. Almost all districts experienced a steady increase over the period, which may indicate developments in infrastructure, the economy, or other relevant sectors. None of the districts showed a significant decline or stagnation over the period, indicating an improvement in the lagging regions of the island of Sumatra.

In 2017, the district with the largest allocation of village funds was South Nias district, which amounted to 346.82 billion rupiah. In 2018 there was an increasing trend of village funds for disadvantaged regions on the island of Sumatra, the allocation of village funds in South Nias actually decreased this year, even so the district that had the highest allocation of village funds was still occupied by South Nias district amounting to 314.48 billion rupiah. South Nias in 2019 until 2021 is still the district with the highest village fund allocation compared to the other 9 districts, which amounted to 351.14 billion rupiah in 2021. The district with the smallest village fund allocation is West Pasaman district, which amounted to 25.25 billion rupiah.

The management of village funds is expected to involve the village community, so that the money used for development does not flow out of the village. The involvement of

ISSN (e): 2829-7350 | ISSN(p): 2963-9441

villagers as laborers financed by village funds is expected to absorb labor and provide income for those who work. Adam Smith in his theory also revealed that humans are one of the factors of production that can determine regional prosperity. It can increase economic development in the area, the theory also explains that human resources in the form of effective labor are the trigger for economic growth (Salvatore, 2008).

The number of workers who increase every year is expected to have a positive impact on the labor market. The calculation of the labor force can be described by the labor force participation rate. labor force participation rate is a calculation of the ratio between the total labor force and the total workforce (BPS, 2022). The labor force in question is the working-age population, namely 15 years - 64 years. People of working age who are active in the labor market (currently working/searching for work) are also included in this calculation.

Most of the labor force participation rate in underdeveloped regions on the island of Sumatra showed an increase or slight fluctuation during the 2017-2021 period. When viewed in general, 2020 was the year when labor force participation rate fell massively in disadvantaged regions on the island of Sumatra, this was thought to be caused by the Covid-19 pandemic. The recovery of labor force participation rate began to be felt since 2021, the disadvantaged regions again experienced an increase in labor force participation. West Nias, and Mentawai Islands show significant and consistent development from year to year, these two districts are classified as fast growing areas. South Nias and North Nias are very vulnerable to external shocks, as seen from their sharp decline, and slow recovery. West Lampung and Pesisir Barat, on the other hand, showed relatively high stability during this period, with only a slight decline in 2020, and a fairly rapid recovery in 2021.

According to Solow's theory, human capital is one of the factors of production that affect economic improvement (Mankiw, 2018). Solow's theory was later developed into the new growth theory, which states that education is the basis of economic growth (Todaro & Smith, 2011). Countries that prioritize the education of their people will have a better economy, if they do not do it at all (Mankiw, 2018). This means that investing in human resources by advancing the education sector will have a positive impact on the economy. In the RPJMN 2020-2024, human resources are also one of the focuses of Indonesia's development (President of the Republic of Indonesia, 2020). National development in human resources is not only realized through quantity control, but also through quality improvement. One of these quality improvements can be through education. Achievements in the education process can be described by indicators of literacy rates, and Average Years of Schooling (RLS) (BPS, 2021).

Some regions show greater growth than others. For example, South Nias and North Nias experienced significant improvements, with increases from 5.1 in 2017 to 6.1 in 2021 and from 6.2 years to 6.9 years respectively. This could be the result of government or non-governmental organization (NGO) intervention programs that focus on improving education in disadvantaged areas. Districts such as Aceh Singkil, Solok Selatan and Pesisir Barat continued to maintain average years of schooling above 8 years throughout the period. This suggests that they are already at a higher stage of educational development than other regions. The Mentawai Islands, although relatively lagging behind other districts such as

Solok Selatan or Pesisir Barat, experienced a moderate improvement from 6.8 years in 2017 to 7.3 years in 2021. As a remotse archipelago, this achievement shows that the government has made efforts to improve access to education in hard-to-reach areas.

Neo-classical growth theory was developed by Robert Solow from the Masschuassets Institute of Technology and Trevor Swan from The Australian National University. This theory analyzes economic growth that is influenced by various factors of production, namely population, capital, and labor, as well as the level of technology (Pasaribu, 2012). Mankiw (2018) revealed that the Solow theory assumes that technological progress is an exogenous variable. Neo-Classical Growth Theory has many variations, but is generally based on the Cobb-Douglas production function.
This function can be written:

$$Q_t = T^{\propto}{}_t K_t L^{\beta}{}_t$$

Description:

Q_t = Production level in period t
T_t = Technological progress in period t
K_t = Availability of capital goods in period t
L_t = Labor in period t
α = Increase in output at one unit capital
β = Increase in output at one unit labor

The relationship between village funds and per capita income can be explained through the role of village funds as a fiscal instrument that serves to encourage economic development in rural areas (Pinilas et al., 2019). Village fund allocations used for infrastructure development, social service improvement, micro, small, and medium enterprise (MSME) development, and job creation, contribute to increasing the productivity and income of local communities. Infrastructure development improves accessibility and economic efficiency, while MSME development and labor-intensive projects create employment opportunities and reduce economic inequality between villages and cities. Thus, through increased per capita income and economic productivity, village funds have the potential to increase per capita income in the area. Community participation in the management of village funds is also an important factor that can increase the effectiveness of development program implementation, thus having a positive impact on local economic growth.

The labor force participation rate has a relationship with per capita income, where an increase in labor force participation rate reflects more individuals participating in economic activity, thus increasing the productive contribution to regional output. Increased labor force participation accompanied by improved labor skills and efficiency also contributes to increased productivity, which directly impacts regional economic growth. In addition, an increase in labor force participation rate generates higher incomes, which boosts domestic consumption and investment, and reduces the dependency ratio, thereby reducing the economic burden and improving per capita welfare (Baerlocher et al., 2021). Thus, high

SINOMICS JOURNAL
International Journal of Social Science, Education, Communication and Economics
ISSN (e): 2829-7350 | ISSN(p): 2963-9441

labor force participation rate has the potential to accelerate per capita income growth through increased productivity, income and consumption.

Average years of schooling has a relationship with per capita income through improving the quality of human resources, which has an impact on economic productivity. The higher the average years of schooling, the greater the opportunity for individuals to acquire relevant skills and knowledge, thus being able to contribute more optimally in the labor market (Yin et al., 2024). Better education also increases the ability to adopt technology, broadens access to higher paying jobs, and reduces unemployment. In addition, higher education promotes health awareness, which in turn increases labor productivity. All these factors contribute directly to increased economic output, which is reflected in the growth of per capita income.

METHOD

This type of research uses descriptive research with a quantitative approach. This study explains how the influence of the Village Fund, Labor Force Participation Rate, and Average Years of Schooling on Per capita income of underdeveloped regions of Sumatra Island, using panel data which is a combination of Time series and Cross section data.

The type of data used in this research is secondary panel data obtained from the Central Bureau of Statistics (BPS) and the Ministry of Finance. In addition, the data obtained were taken from BPS publications, previous journals and previous theses, and other literature related to this research. The data used is annual data starting from 2017-2021. The variables used are Per capita income (Y), Village Fund (X1), Labor Force Participation Rate (X2), Average Years of Schooling (X3), in Indonesia.

To identify the factors that influence economic growth in 10 districts of underdeveloped regions of Sumatra Island, a panel data regression equation is used. The dependent variable in this study is per capita income and the independent variables in this study are village funds, labor force participation rate, and average years of schooling. For this reason, the equation function used in this study is:

$$\mathbf{LOG(PENDit) = \beta 0 + \beta 1DDit + \beta 2TPAKit + \beta 3RLSit + eit}$$

Description:

PEND	= District i per capita income in year t
β0	= Constant
β1, β2 β3	= Regression Coefficient
DD	= Village Fund of District i in year t
TPAK	= Labor Force Participation Rate of Regency i in year t
RLS	= Average Years of Schooling of District i in year t
i	= Cross section data, Disadvantaged Regencies of Sumatera Island
t	= Time series data, 2017-2021
e	= Error Term

RESULTS AND DISCUSSION

Descriptive Statistical Analysis Results

Descriptive statistics are used to observe results such as mean, median, minimum, maximum, and standard deviation. In this study, descriptive statistics are used to describe or describe the data of the variables studied, namely per capita income, village funds, labor force participation rate, and average years of schooling. The total observations in this study were 50 and the data were processed using the Eviews 9 application. The following are the results of the descriptive statistics obtained.

	PEND	DD	TPAK	RLS
Mean	19.496	120	74.5534	7.13
Median	17.83	108.5	74.85	7.35
Maximum	34.27	356	90.79	8.6
Minimum	11.79	25	51.83	5.1
Std. Dev.	5.78394	85.17793	7.96193	1.0772
Observations	50	50	50	50

Multiple Linear Regression Results

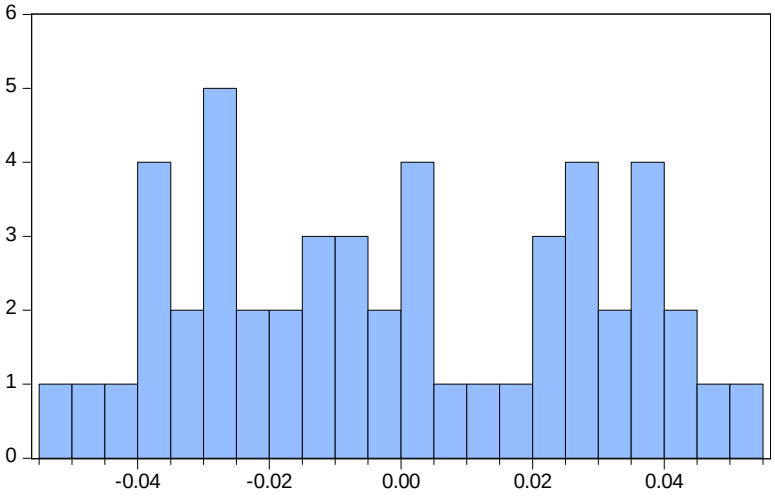
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.602901	0.132894	19.58633	0.0000
DD	0.001649	0.000269	6.135685	0.0000
TPAK	0.001763	0.000864	2.039599	0.0486
RLS	-0.000162	0.018219	-0.008883	0.9930
R-squared	0.991886			
Adjusted R-squared	0.989254			
S.E. of regression	0.034002			
F-statistic	376.9018			

LOG(PEND)it = 2,602901 + 0,001649 DDit + 0,001763 TPAKit -0,000162 RLSit + εit

SINOMICS JOURNAL
International Journal of Social Science, Education, Communication and Economics
ISSN (e): 2829-7350 | ISSN(p): 2963-9441

Classical Assumption Test

Residual Normality Test



Series: Standardized Residuals	
Sample 2017 2021	
Observations 50	
Mean	4.02e-18
Median	-0.003308
Maximum	0.052603
Minimum	-0.051648
Std. Dev.	0.029547
Skewness	0.076428
Kurtosis	1.737379
Jarque-Bera	3.369954
Probability	0.185449

Source: Eviews 9

The test results above the probability value is 0.185449, α = 0.05 with the number of independent variables = 3, then the Chi-Squares table value is obtained = 7.815. The result shows that Jarque-Bera < Chi-Squares and probability > alpha, the conclusion is that the data is normally distributed.

Multicollinearity Detection Result

	DD	TPAK	RLS
DD	1.00000	0.176871	-0.63937
TPAK	0.176871	1.00000	-0.51097
RLS	-0.63937	-0.510971	1.00000

The test results above are the coefficient value of the Village Fund variable, the labor force participation rate, and the average length of schooling, smaller than 0.80, so it can be concluded that there is no multicollinearity problem.

The Coefficient of Determination

This test is carried out with the aim of measuring the percentage of the total variation of the independent variables that can be explained by the regression model (Widarjono, 2018). The regression model can be said to be good if the R^2 value is close to 1 or 100%. The range of the coefficient of determination is $0 \leq R^2 \leq 1$. ari independent variables that can be explained by the regression model (Widarjono, 2018). The regression model can be said to be good if the R^2 value is close to 1 or 100%. Based on the results of the Fixed Effect Model regression calculation, the R^2 value is 0.991886, and the adjusted R^2 value is 0.989254, this means that the DD, TPAK and RLS variables can explain 99.1% of changes

in PEND in 10 districts of disadvantaged areas of Sumatra island, while the remaining 0.9% is explained by other variables.

CONCLUSION

The results of the regression show that DD (Village Fund) has a positive and significant effect on the per capita income of underdeveloped regions of Sumatra Island. Thus, if DD increases, the per capita income will also increase. Then these results can be seen from the regression coefficient (Coefficient) on the DD variable which is positive, amounting to 0.001649, which means that if DD increases by 1 unit, then Per capita income will increase by 0.1649%.

The results of the regression show that TPAK (Labor Force Participation Rate) has a positive and significant effect on the per capita income of underdeveloped regions of Sumatra Island. Thus, if the TPAK increases, the per capita income will also increase. Then these results can be seen from the regression coefficient (Coefficient) on the TPAK variable which is positive at 0.001763 which means that if TPAK increases by 1%, then the per capita income will increase by 0.1763%.

The results of the regression show that RLS (Average Years of Schooling) has a negative and insignificant effect on the per capita income of underdeveloped regions on the island of Sumatra. Thus, if RLS increases, the per capita income will decrease. Then these results can be seen from the regression coefficient (Coefficient) on the RLS variable which is positive at -0.000162 which means that if RLS increases by 1 unit, then Per capita income will increase by -0.0162%.

REFERENCES

Baerlocher, D., Parente, S. L., & Rios-Neto, E. (2021). Female Labor Force Participation and economic growth: Accounting for the gender bonus. Economics Letters, 200, 109740. https://doi.org/10.1016/j.econlet.2021.109740

Badan Keahlian, DPR RI. (2020). Analisis RKP dan Pembicaraan Pendahuluan APBN.

Badan Perencanaan Pembangunan Nasional (BAPPENAS). (2020). Pemutakhiran.

BPS. (2021). Statistik Pendidikan 2021.

BPS. (2022). Statistik Indonesia 2022.

Kolaborasi Masyarakat dan Pelayanan untuk Kesejahteraan (KOMPAK). (2017). Dana Desa dan Penanggulangan Kemiskinan.

Mankiw, N. G. (2018). Pengantar Ekonomi Makro (Edisi Ketujuh). Salemba Empat.

Pasaribu, R. B. F. (2012). Teori-teori Pembangunan. Fakultas Ekonomi dan Bisnis, Universitas Gunadarma.

Pinilas, A., Kumenaung, A. G., & Rorong, I. P. (2019). Pengaruh Dana Desa Terhadap Pendapatan Masyarakat di Kabupaten Kepulauan Talaud. Jurnal Berkala Ilmiah Efisiensi, 19(3).

Presiden Republik Indonesia. (2020). RPJMN 2020-2024.

Rencana Kerja Pemerintah Tahun 2021.

Salvatore, D. (2008). Ekonomi Mikro. Salemba Empat.

ISSN (e): 2829-7350 | ISSN(p): 2963-9441

Sukirno, S. (2019). Makroekonomi Teori Pengantar (Edisi Ketiga). Rajawali Pers.

Todaro, M. P., & Smith, S. C. (2011). Pembangunan Ekonomi (Edisi 11). Erlangga.

Widarjono, A. (2018a). Ekonometrika Pengantar Dan Aplikasinya Disertai Panduan Eviews (Edisi Kelima). UPP STIM YKPN Yogyakarta.

Widarjono, A. (2018b). Ekonometrika: Pengantar dan Aplikasinya Disertai Panduan EViews (5th ed.). UPP STIM YKPN.

Yin, X., Jiayi, G., & Selvaratnam, D. P. (2024). The Effect of Average Years of Schooling on GDP Per Capita Change Rate: Evidence from Malaysia. International Journal of Social Science and Human Research, 7(06). https://doi.org/10.47191/ijsshr/v7-i06-67

Adam Smith. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations.

Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. The Quarterly Journal of Economics, 70(1), 65–94.

Todaro, M. P., & Smith, S. C. (2011). Economic Development (12th Edition). Pearson.

Deffa Lionanta[1], Taher[2]
DOI: https://doi.org/10.54443/sj.v3i4.412