



The Effect of Human Resources and Regional Status on Rural Poverty in Eastern Indonesia

Raja Milyaniza Sari, Nursini, Nur Dwiana Sari Saudi, Agussalim

Universitas Hasanuddin, Makassar, Indonesia
rajamilyanizasari@gmail.com

Abstract. The majority of rural areas in Eastern Indonesia have low quality human resources and regional status, these phenomena make Eastern Indonesia appear to be far behind the Western Indonesia. Is poverty in rural Eastern Indonesia a result of these phenomena? In the pursuit of the optimal approach to reducing poverty, this study will be crucial. This study aims to analyze the effect of Human Resources and Regional Status on rural poverty in Eastern Indonesia. The data used are rural human resources quality data as measured by rural Human Development Index (HDI), data sourced from the Central Bureau of Statistics (BPS) and regional status data as measured by the Village Development Index (VDI), data sourced from the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (KDPDTT). The data used is panel data from 12 provinces in Eastern Indonesia in 2016 - 2022. The results of panel data regression analysis show that human resource quality (HDI) has a significant effect on rural poverty in Eastern Indonesia, while regional status (VDI) has no significant effect on rural poverty in Eastern Indonesia.

Keywords: Rural Poverty, Eastern Indonesia, Human Resources, Regional Status, Human Development Index, Village Development Index

1 Introduction

The distribution of world poverty shows the largest proportion in rural areas, where the rural poverty rate is three times greater (17.2%) than the urban poverty rate (5.3%).^[1] The rural poor live with \$1.25 or less per day, representing nearly 75% of people in extreme poverty globally^[2]. Multidimensional poverty is more prevalent in rural areas than in urban ones, as evidenced by the fact that rural residents cumulatively experience more limited access to essential utilities^[1]. Indonesia's poverty over the last seven years also shows a relatively similar condition to world poverty, where the difference between rural and urban poverty rates is quite high, reaching 4.83 – 6.23% (Figure.1).

© The Author(s) 2024

A. Patunru et al. (eds.), *Proceedings of the 8th International Conference on Accounting, Management, and Economics (ICAME 2023)*, Advances in Economics, Business and Management Research 279,
https://doi.org/10.2991/978-94-6463-400-6_39

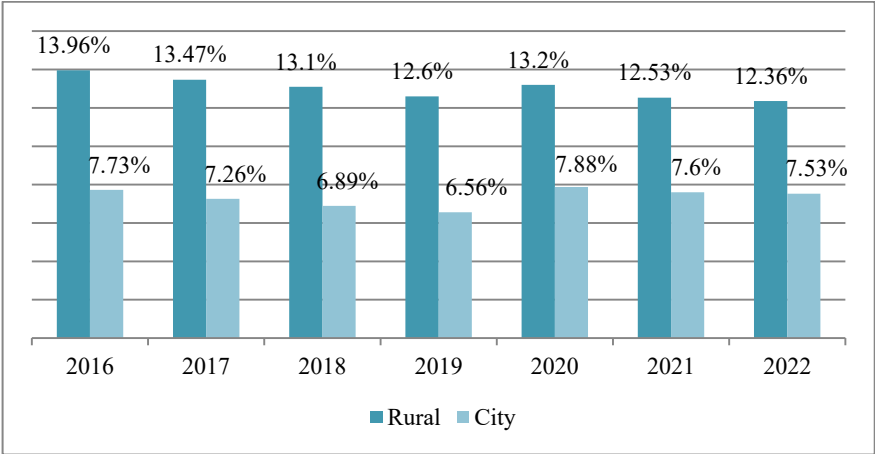


Figure 1. Indonesia Rural and Urban Poverty Rate 2016 – 2022

When it comes to rural areas, the rural poverty rate in Eastern Indonesia is significantly greater than that in Western Indonesia. According to BPS statistics, there is a significant and comparatively stable disparity in the rural poverty rate between western and eastern Indonesia. This discrepancy exceeds 8% (Figure 2).

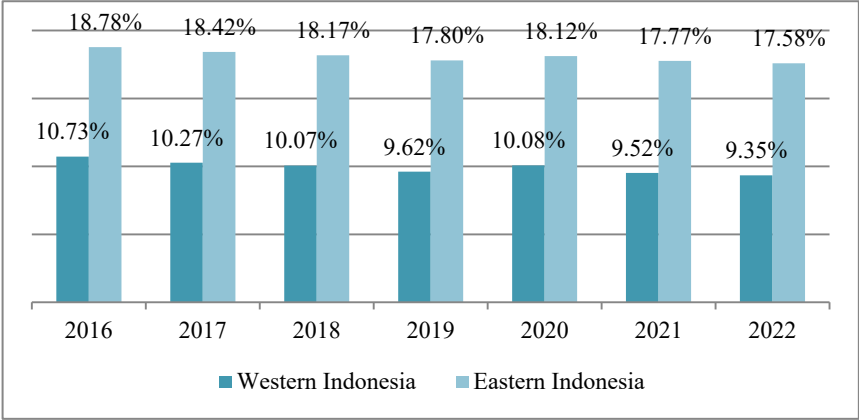


Figure 2. Rural Poverty rate in Western Indonesia and Eastern Indonesia 2016 – 2022

Experts argue that the high rural poverty rate is mainly the result of the condition of human resources and the availability of infrastructure and access to various utilities related to basic needs^[3]. Human resources play an important role in poverty alleviation efforts, because they take the position as subjects (actors) and objects (targets). According to UNDP, the caliber of an area's human resources can be determined from the Human Development Index (HDI) value of that region^[4]. The condition of village infrastructure and its accessibility is often related to the status of

the village, where nationally the determination of village status is based on a measure known as the Village Development Index (VDI)^[5].

The HDI is a metric that assesses the population's physical and non-physical quality based on factors like health, education, and access to acceptable housing^[6] or it can be said that the HDI can describe the quality conditions of the population in terms of qualitative (non-economic) and quantitative (economic). Empirically, an increase in HDI can reduce the poverty rate^{[7][8]}. The BPS categorizes HDI into four groups: low HDI ($HDI < 60$), medium HDI ($60 \leq HDI < 70$), high HDI ($70 \leq HDI < 80$), and very high HDI (≥ 80). Based on the HDI value, it is known that the quality of the rural population in Western Indonesia is higher than Eastern Indonesia (Figure 3.).



Figure 3. Rural HDI in Western and Eastern Indonesia 2016 – 2026

If the HDI describes the quality of people in a region, the VDI describes the condition of village development related to: availability of infrastructure and access to public transportation and other basic amenities, as well as government services. Based on the VDI value, villages are classified into 5 village statuses, as follow: 1)Very Underdeveloped Village, with VDI value ≤ 0.490 ; 2) Underdeveloped Village, with VDI value: $0.4907 - 0.5989$; 3) Developing Village with VDI value: $0.5989 - 0.7072$; 4) Advanced Village with VDI value: $0.7072 - 0.8155$; and 5) Independent Village, with VDI value > 0.8155 . The higher the VDI value, the better the infrastructure conditions and the community's accessibility to public services. According to the findings of several earlier studies, the poverty rate in a given area decreases with improved public infrastructure and services^{[9][10]}. The average value of rural VDI in eastern Indonesia shows that rural areas in eastern Indonesia are dominated by very underdeveloped villages and underdeveloped villages (Figure 4.).

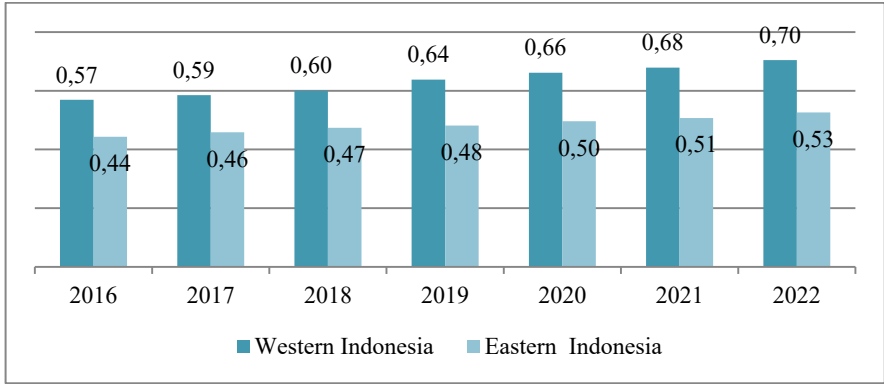


Figure 4. VDI in Western and Eastern Indonesia 2016 – 2022

As the preceding explanation demonstrates, HDI and VDI have an impact on rural poverty rates. However, data suggests that gains in these variables may not necessarily translate into lower rural poverty rates, particularly in Eastern Indonesia. Thus, more research is needed to determine how the HDI and VDI affect poverty rates in rural, eastern Indonesia.

2 Methodology

This research is an explanatory quantitative research using panel data from 12 provinces in Eastern Indonesia in 2016 - 2022, as follows: West Nusa Tenggara, East Nusa Tenggara, West Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, Gorontalo, Maluku, North Maluku, Papua and West Papua. The secondary data used are data on rural poverty rates and rural human resources using HDI in Eastern Indonesia sourced from BPS Indonesia (<https://www.bps.go.id/>) and village status data using VDI sourced from Kemendesa PDTT Indonesia (<https://idm.kemendesa.go.id/>), where the data is collected using the literature study method.

This study used the Fixed Effect Model (FEM), the approach technique follows Gujarati (2009), Firdaus (2021) and Widarjono (2005):^{[11][12][13]}

- 1) *One Way Error Component atau Least Square Dummy Variabel (LSDV)*, which aims to be able to present intercept differences between individuals or between times:

$$Y_{it} = \alpha_1 + \alpha_2 D_{2i} + \dots + \alpha_n D_{ni} + \beta X_{it} + u_{it} \quad (1)$$

$$Y_{it} = \gamma_1 + \gamma_2 D_{2t} + \dots + \alpha_n D_{nt} + \beta X_{it} + u_{it} \quad (2)$$

- 2) *Two Way Error Component*, which aims represents differences in intercepts derived from variation between individuals and times:

$$Y_{it} = \alpha_1 + \alpha_2 D_{2i} + \dots + \alpha_n D_{ni} + \gamma_1 + \gamma_2 D_{2t} + \dots + \alpha_n D_{nt} + \beta X_{it} + u_{it} \quad (3)$$

dimana:

Y = dependent variabel (rural porverty rate in Eastern Indonesia);

X = variable independent (X_1 = rural IPM and X_2 =VDI in Eastern Indonesia);
i = entity (1, 2,...n;)
t = times (1, 2,...n;)
 α, γ = intersep
D = dummy variable
 β = slope
 μ = error regresi untuk entitas dan waktu

3 Result and Discussion

The average poverty rate in rural eastern Indonesia without rural Bali Province over the past 7 years has been 19.16%. The lowest poverty rate is in rural North Maluku Province at 6% and the highest poverty rate is in rural Papua Province at 37% (Table 1.). Rural Papua has the highest incidence of rural poverty and has remained in that position for more than two decades with a relatively low average poverty rate reduction (0.23% per year). The high or low poverty rate in an area is often influenced by factors that are related to each other, such as income level and education, level of education and the availability of infrastructure and basic services ^[14].

Table 1. Dependent and Independent Variable Statistics in Rural Eastern Indonesia

Variabel	N	Range	Minimum	Maximum	Rata-rata	Std. Error	Standar Deviasi
Y (%)	84	31	6	37	19.16	1.01	9.24
X1 (IPM)	84	16.54	54.04	70.58	65.02	0.39	3.62
X2 (IDM)	84	0.32	00.41	0.73	0.58	0.01	0.07

The anomalies found in Papua Province are: although the GRDP per capita of Papua Province is the fourth largest in Indonesia, Papua Province has the highest poverty rate in Indonesia. Most Papuans do not feel the impact of economic success, this condition is reflected in Papua's low HDI value ^[15]. The HDI of Papua Province is in the lowest HDI category (<60), which is in the range of 54.0 - 57.7 in the last 7 years. Meanwhile, the highest rural HDI in eastern Indonesia is in North Sulawesi Province (SU), which is in the range of 67.75 - 70.58.

Village development related to infrastructure conditions and community accessibility to public services can be seen from the VDI value. Based on VDI data, it is known that the lowest VDI is also in rural Papua Province, which is in the range of 0.41 - 0.55, which means that Papua Province is dominated by very underdeveloped villages and underdeveloped villages. The phenomenon of rural backwardness seems to be synonymous with poverty traps, according to Medeiros (2021), large differences in infrastructure between regions create gaps that are characterized by the condition of most of the population living in poverty^[16]. Therefore, the physical infrastructure and basic services approach is still very relevant in rural eastern Indonesia, which generally has low development achievements and high poverty levels such as in most rural areas in: Papua, west Papua, Maluku and east Nusa Tenggara^[8]. Meanwhile the highest VDI in rural eastern Indonesia is West Nusa Tenggara and Gorontalo province with VDI in the range of 0.54 - 0.73, in other words, rural areas in West

Nusa Tenggara and Gorontalo province on average do not have the status of very underdeveloped villages.

Human Resources (HDI) and Rural Poverty in Eastern Indonesia

Panel data analysis using the LSVD approach with entity dummy variables show that the independent variable (X) has a significant effect ($F = 0<0.05$) of 99.6% ($R^2=0.996$) on the dependent variable (Y), with the remaining variation coming from other factors not included in the model. The LSVD approach with time dummy variables shows that the dependent variable is significantly impacted by the independent variables by 59.7%. Based on the significance value of the HDI variable (X1) for both approaches, it has a significant effect because it has a significance value smaller than 0.05, while in the Two Way Error Component approach technique, the HDI has no discernible impact on the rural poverty rate in Eastern Indonesia. Because its significance value (0.79) is greater than 0.05 (Table 2).

Table 2. FEM Estimation results of HDI (X1) and VDI (X2) on Rural Poverty Rate in Eastern Indonesia (Y)

Teknik	R	R ₂	DW	F	B (X ₁ -->Y)	Sig	B (X ₂ -->Y)	Sig
1) LSDV	0.998	0.996	1.923	0	-0.371	0	-0.315	0.9
	0.773	0.597	2.275	0	-2.016	0	-3.432	0.853
2) Two Way Error Component	0.998	0.996	1.859	0	0.151	0.791	-0.292	0.914
dl = 0.8122 < DW < 4-du (4 – 1.5794 = 2.4206)								

The LSDV approach with entity dummy variables shows: if HDI increases 1% , it will reduce the rural poverty rate in Eastern Indonesia by 0.371%. Meanwhile The LSDV approach with time dummy variables shows that an increase in HDI by 1 % will reduce the rural poverty rate in eastern Indonesia by 2%. If we look back at the average growth of HDI and the rural poverty rate in Eastern Indonesia without Bali Province, it relatively shows the same behavioral trend as the rural poverty rate model with the LSDV approach technique with time dummy variables (Figure 5.) An increase in HDI is followed by a decrease in the rural poverty rate in eastern Indonesia, this is consistent with studies by Yustie (2017) and Abrar (2022), which discovered that a rise HDI significantly lowers the poverty rate^{[7] [17]}.

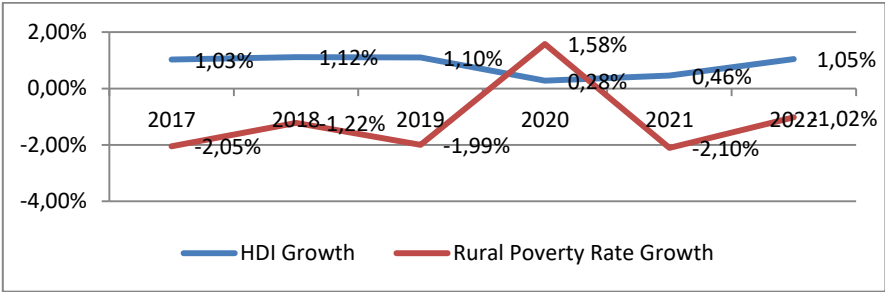


Figure 5. HDI Growth and Rural Poverty Rate Growth in Eastern Indonesia 2017-2022

According to Romer (1990) and Nelson (1966) human resources have a direct impact on both the rate of technological adoption and the degree of technological innovation. This shows the role of human resources as a driving force that will attract other factors such as natural resources to contribute more to the growth of per capita income which plays a major role in development and poverty alleviation ^[18].

Regional Status (VDI) and Rural Poverty Rate in Eastern Indonesia

Based on the VDI data, it is known that rural eastern Indonesian districts outside of Bali Province have a VDI value between 0.443 and 0.526. (Figure 2.). This illustrates that most rural areas in eastern Indonesia have the status of very underdeveloped villages ($VDI \leq 0.490$) and underdeveloped villages ($VDI: 0.4907 - 0.5989$). In other words, the condition of infrastructure and access to public services in rural eastern Indonesia is limited. This condition certainly does not support poverty reduction programs because it hampers various economic and social activities. Even if the poverty rate decreases, the decline is relatively slow because it is constrained by limited infrastructure and low public services.

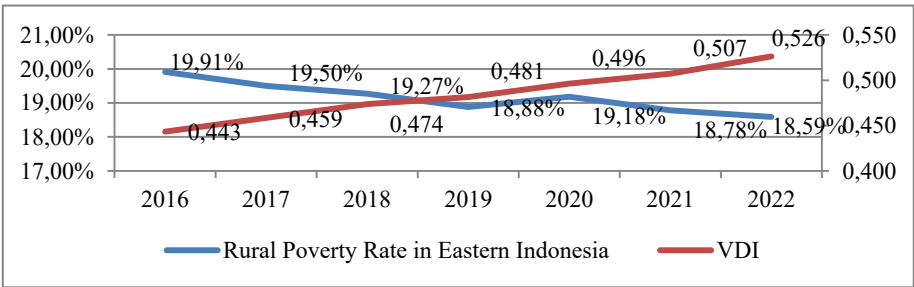


Figure 6. VDI and Rural Poverty Rate in Eastern Indonesia 2017-2022

The results of analyzing the eastern Indonesian rural poverty model using the LSDV and Two-way direction techniques show that VDI variable (X2) does not reduce the level of rural poverty in Eastern Indonesia significantly because the significance value is greater than 0.05 (Table 2.) This means that VDI has no real effect on reducing the level of poverty in eastern Indonesia. This is in accordance with what Fasya (2020) found that VDI and the poverty rate are negatively correlated but insignificant ^[19] but in contrast to Handoyo (2021) who found a significant effect of village status dummy

on the poverty severity index and poverty depth index, where the status of very underdeveloped and underdeveloped villages has a positive effect: increasing the severity and depth of poverty, while the status of developing and independent villages has a negative effect: reducing the severity and depth of poverty ^[20]. Wang (2017) found that one of the dominant factors affecting poverty is the difficult geographical environment and requires large capital in the provision of infrastructure and public services, this condition makes the village take a slow process to get out of the status of underdeveloped and poverty ^[21].

Conclusion

1. Human resources (HDI) play a major role in lowering rural poverty.in eastern Indonesia.
2. Regional status (VDI) in the category of very underdeveloped and underdeveloped villages has no discernible impact on lowering rural poverty levels. in eastern Indonesia.
3. Rural areas with low HDI and VDI tend to have high poverty rates.

References

1. The World Bank. Poverty and Shared Prosperity 2018: Piecing Together The Poverty Puzzle. Washington D.C.; 2018. 201 p.
2. Rodriguez-Pose A, Hardy D. Addressing Poverty and Inequality in The Rural Economy from A Global Perspective. Elsevier Appl Geogr. 2015; xxx:1–13.
3. Ikawati SW. Kondisi Kemiskinan di Perdesaan dan Perkotaan. Media Informasi Peneliti Kesejahteraan Sosial. 2016; 40(2) :191–201.
4. Siswati E, Hermawati DT. Analisis Indeks Pembangunan Manusia (IPM) Kabupaten Bojonegoro. UWKS Sosioagribisnis. 2018;18(2):93–114.
5. Kementerian Desa PDTT. Indeks Desa Membangun [Internet]. Jakarta: Kementrian Desa, Pembangunan Daerah Tertinggal dan Transmigrasi; 2018. Available from: <http://idm.kemendes.go.id>
6. Suliswanto M. Pengaruh Produk Domestik Bruto (PDRB) dan Indeks Pembangunan Manusia (IPM) Terhadap Angka Kemiskinan di Indonesia. Jurnal Ekonomi Pembangunan. 2010;8(2):357–66.
7. Abrar M, Sufirmsyah, Ferayanti, Firman, Iskandar I. Pengaruh IPM, Inflasi, Pengangguran dan Pertumbuhan Ekonomi Terhadap Kemiskinan. Jurnal Ekonomi dan Pembangunan. 2022;13(1):37–46.
8. Yahya A, Agustina R. Pembangunan Desa dan Tingkat Kemiskinan. Jurnal LitBang Sukowati. 2022;6(1):98–108.
9. Nurmala N, Hutagaol MP. Membandingkan Pengaruh Infrastruktur Terhadap Kemiskinan di Kawasan Barat dan Timur Indonesia. Risalah Kebijakan Pertanian dan Lingkungan. 2022 ;9 (3) : 188–207.
10. Reardon T. Rural Non-Farm Income in Developing Countries. The state of food and agriculture. 1998.
11. Gujarati DN, Porter DC. Basic Econometrics. 5th ed. Hilbert AE, Fox N, editors. Douglas Reiner; 2009. 946 p.
12. Fidaus M, Irawan T, Ahmad FS, Siregar H, Siswara D, Jakariya R. Aplikasi Model

- Ekonometrika dengan RStudio. 1st ed. Sari AM, editor. Bogor: IPB Press; 2021. 246 p.
13. Widarjono A. EKONOMETRIKA: Teori dan Aplikasi. 1st ed. Yogyakarta: EKONISA Fakultas Ekonomi UII Yogyakarta; 2005. 420 p.
 14. Fadila R, Marwan. Pengaruh Indeks Pembangunan Manusia (IPM) dan Pertumbuhan Ekonomi terhadap Tingkat Kemiskinan di Provinsi Sumatera Barat periode tahun 2013-2018. *Jurnal EcoGen*. 2020;3(1):120.
 15. Landiyanto EA. Alternative Strategy to Reduce Poverty in Papua Through Microfinance Development. MPRA. 2006. Report No.: 4391.
 16. Medeiros V, Saulo R, Ribeiro M, Vasconcelos P. Infrastructure and household poverty in Brazil: A regional approach using multilevel models. *ELSEVIER World Dev* [Internet]. 2021;137:105–18. Available from: <https://doi.org/10.1016/j.worlddev.2020.105118>
 17. Yustie R. Analisis Pengaruh Indeks Pembangunan Manusia (IPM) dan Tingkat Pengangguran Terbuka (TPT) Terhadap Kemiskinan Kabupaten dan Kota Di Provinsi Jawa Timur. *Equilibrium*. 2017; Edisi Khusus:49–57.
 18. Benhabib J, Spiegel MM. The Role of Human Capital in Economic Development Evidence from Agregate Cross-Country Data. *Elsevier Jurnal Monet Econ*. 1994;34:143–73.
 19. Fasya MN, Prayitno G, Subagiyo A. Hubungan Kemiskinan dan Indeks Desa Membangun Di Kecamatan Jabung, Kabupaten Malang. *Jurnal Univ Brawijaya*. 2020;9(0341):1–10.
 20. Handoyo FW, Hidayatina A. The Effect of Rural Development on Poverty Gap, Poverty Severity and Local Economic Growth in Indonesia. *Jurnal Bina Praja* [Internet]. 2021;13(3):369–81. Available from: <https://jurnal.kemendagri.go.id/index.php/jbp/article>
 21. Wang Y, Chen Y. Using VPI to Measure Poverty-Stricken Villages in China. *Soc Indic Res*. 2017; 133(3) :833–57.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

