East Asian Journal of Multidisciplinary Research (EAJMR)
Vol. 4, No. 7, 2025: 3475 - 3490

Determinants of Gross Enrollment Rate in Higher Education in Indonesia From 2018 to 2024

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A R T I C L E I N F O

Keywords: GERHE, Government Spending, Poverty, Unemployment, Population Growth

Received : 10, June
Revised : 30, June
Accepted: 26, July

A B S T R A C T

This study aims to analyze the factors influencing the Gross Enrollment Ratio in Higher Education (GERHE) in Indonesia during the period 2018–2024. The independent variables examined include GDP per capita, population growth rate, poverty rate, government spending on education, and open unemployment rate. Using panel data from 34 provinces in Indonesia and applying a Fixed Effect Model (FEM), the study investigates the impact of these macroeconomic and social indicators on GERHE. The estimation results indicate that both the poverty rate and population growth rate have a negative and statistically significant effect on GERHE, while government spending on education and the open unemployment rate show a positive and significant relationship. In contrast, GDP pre capita does not exhibit a statistically significant impact. These findings highlight that access to higher education in Indonesia is strongly affected by social welfare factors and regional fiscal capacity, underscoring the importance of affirmative policies and government interventions in overcoming structural barriers to education access.

DOI prefix: https://doi.org/10.55927/eajmr.v4i7.285
ISSN-E: 2828 – 1519 (Online)
https://mtiformosapublisher.org/index.php/eajmr

INTRODUCTION

In the context of modern economic growth, reliance has shifted from traditional industrial and service sectors toward strengthening human capital as a foundational driver in knowledge- and technology-driven economies. Tertiary education assumes a crucial role in developing a labor force that is both efficient and responsive to the evolving demands of the job market. From the perspective of human capital and labor economics, education is seen as a strategic investment to enhance skills, productivity, and labor mobility (Indrawati & Kuncoro, 2021). Furthermore, empirical studies in the Indonesian economy highlight that educational investment and workforce welfare significantly influence national productivity levels (Syah Aji et al., 2022). As such, the Gross Enrollment Ratio (GER) in higher education becomes a vital metric for evaluating the performance of the higher education sector in advancing economic development and addressing social disparities.

From an economic standpoint, higher education is regarded as an investment in human capital that yields returns in the form of increased labor productivity and long-term economic growth (World Bank, 2018). A key metric used to assess the progress of higher education development is the Gross Enrollment Ratio (GER). This indicator reflects the proportion of individuals enrolled in higher education relative to the population of college-age individuals (19–23 years), regardless of the students' actual ages.

Higher education institutions play a pivotal role in enhancing human capital quality through the implementation of the *Tri Dharma of Higher Education*: teaching, research, and community service. By adopting up-to-date curricula and innovative instructional methods, universities are able to produce graduates who are both competent and equipped to navigate the demands of the labor market (Abdillah, 2024). Quality education not only boosts workforce productivity but also stimulates innovation, both of which are key drivers of a country's economic growth (Kardina & Magriasti, 2023).

Between 2018 and 2024, the Gross Enrollment Ratio (GER) for higher education in Indonesia exhibited notable fluctuations. In 2018, the GER stood at approximately 36.3%, reflecting a positive trend in the expansion of access to tertiary education. However, the economic and educational disruptions caused by the COVID-19 pandemic led to a sharp decline in 2020, with the GER dropping to around 30.85% (BPS, 2021). This decline illustrates the negative elasticity of demand for higher education in response to economic shocks and rising opportunity costs. From 2021 onwards, the GER gradually rebounded, reaching an estimated 32% by 2024 (Kemendikbudristek, 2024).

This study incorporates Gross Regional Domestic Product (GRDP) per capita as one of the key variables to examine its influence on higher education enrollment rates. GRDP per capita plays a crucial role in shaping households' purchasing power for accessing tertiary education. It reflects the average economic capacity of individuals within a given region. As GRDP per capita increases, households are more likely to afford the costs associated with sending their children to university. Previous studies have demonstrated a positive

correlation between GRDP per capita and the Gross Enrollment Ratio (GER) in higher education across Indonesia (Afandi & Rahmanto, 2021).

The Gross Enrollment Ratio in Higher Education (GERHE) can be influenced by a range of factors, including both economic and demographic variables. Among demographic indicators, population growth plays a critical role in shaping the level of pressure on higher education systems. An increase in the number of individuals within the productive age group may raise the potential demand for tertiary education. However, without a corresponding expansion in university capacity and improvement in the quality of educational services, this can lead to a decline in enrollment rates. Uncontrolled population growth may result in an imbalance between the demand for and supply of educational opportunities, ultimately reducing participation in higher education particularly in regions with limited educational infrastructure (Hasanah, 2020).

In addition, the poverty rate is a key determinant contributing to the low gross enrollment ratio in higher education. Low-income families often perceive the cost of education as a substantial burden, leading them to prioritize immediate entry into the labor market for their children over continuing their studies. The proportion of students from the lowest income quintile who pursue higher education remains significantly lower than that of students from middle- and upper-income groups. Consequently, poverty not only limits a household's financial capacity but also diminishes long-term educational aspirations (Puslapdik, 2023).

Meanwhile, regional government spending on the education sector is another variable considered in this study. Public expenditure in education is a critical factor influencing the Gross Enrollment Ratio in Higher Education (GERHE). Higher levels of educational funding enable improved access to educational infrastructure and facilities, expanded scholarship programs, and enhancements in teaching quality. Regions that allocate a greater portion of their budgets to education tend to demonstrate higher GER compared to those with lower fiscal commitment (Kemendikbudristek, 2022). Government spending that is specifically directed toward improving access to education particularly higher education has been shown to positively impact educational participation at the provincial level in Indonesia. Therefore, the scale of education budget allocation serves as a strategic instrument for promoting equitable access to higher education across all regions of the country (Pratormo & Astuti, 2020).

Unemployment presents an ambivalent signal when it comes to decisions regarding the pursuit of higher education. On one hand, high unemployment rates may encourage individuals to continue their studies in order to enhance their competitiveness in the labor market. On the other hand, when elevated unemployment stems from low absorption rates of university graduates, it may discourage prospective students from enrolling in higher education, as it is perceived as offering limited job security. The open unemployment rate is thus an economic factor that can influence the Gross Enrollment Ratio in Higher Education (GERHE) (Fadli & Hedratno, 2019). Ultimately, the relationship between unemployment and higher education enrollment is complex and contingent upon the structural economic conditions of each region.

Although numerous previous studies have explored the determinants of higher education enrollment, the majority have focused on micro-level analyses at the household level or have examined only one or two economic variables in isolation. The research gap addressed in this study lies in the absence of comprehensive investigations that integrate economic education theory with panel data analysis across provinces to assess the simultaneous effects of multiple macroeconomic indicators on higher education enrollment in Indonesia. This study aims to fill that gap by employing a panel data approach covering 34 provinces over the 2018–2024 period.

THEORETICAL REVIEW

Educational economic theories offer a conceptual foundation for understanding the factors that influence the Gross Enrollment Ratio (GER) in higher education. The Human Capital Theory, as proposed by Becker (1964) and Schultz (1961), views education as an investment that enhances individual productivity and earnings. A higher GER indicates greater potential for human capital accumulation, which in turn supports national economic growth. Meanwhile, Psacharopoulos and Woodhall (1985), through the Theory of Demand and Supply in Education, emphasize that the decision to pursue higher education depends largely on the perceived balance between costs and expected benefits. When tuition fees such as the Single Tuition Fee (UKT) in Indonesia are high, demand tends to decrease unless mitigated by interventions like subsidies or scholarship programs such as KIP Kuliah.

The Educational Externalities Theory, as articulated by McMahon (1999) and Acemoglu & Angrist (2000), emphasizes the broader social benefits of higher education that extend beyond the individual to society at large. Higher education contributes to improved public health outcomes, reductions in crime rates, and greater civic engagement through participation in democratic processes and social development. These impacts are considered non-market effects, meaning they are not directly captured by labor market metrics, yet they play a substantial role in advancing economic and social progress. As such, higher education generates significant positive externalities, thereby justifying government intervention through public funding and affirmative policies such as subsidies, scholarships, and initiatives to expand access in underdeveloped regions.

The Gross Enrollment Ratio (GER) represents the proportion of students enrolled at a specific level of education relative to the total population within the official age group for that level, expressed as a percentage. It serves as an indicator to assess the extent of educational participation at a given level. A higher GER indicates that a greater number of school-aged individuals are attending school at the intended educational level (Safira & Wibowo, 2021). The relationship between economic growth and GER in higher education in Indonesia is complex and influenced by multiple factors. Research by Amaluddin (2014) found that economic growth contributes to an increase in GER, particularly in regions with high levels of urbanization.

Gross Regional Domestic Product (GRDP) per capita is a key indicator of regional welfare and economic capacity. A higher GRDP per capita reflects the

ability of communities to afford educational expenses, including those associated with tertiary education. Empirical studies have shown that provinces with higher GRDP per capita tend to report greater levels of higher education participation (Irwandi et al., 2019; Putri, 2024). These findings suggest a significant relationship between GRDP and GER.

Population growth is a crucial factor affecting the Gross Enrollment Ratio (GER) in higher education, as it is directly linked to the number of prospective students and the capacity and preparedness of higher education systems to accommodate them. A rising population, particularly in the 19–23 age cohort, naturally increases the potential demand for tertiary education. However, if the expansion of higher education infrastructure does not keep pace with this demographic increase, GER may decline. This suggests a significant correlation between population size and fluctuations in higher education enrollment (Habibah et al., 2019). According to Arumsari, Darmawan, Fitriani, Rini, Suciningrum, and Rahayu (2015), as age and educational level increase, participation rates in education tend to decline a trend influenced by demographic and other socioeconomic variables.

In a recent study by Rawiyanti and Budiarti (2024) using data from the March 2023 Susenas survey and binary logistic regression analysis, findings revealed that only 32.28% of individuals from poor households participated in higher education. Factors that significantly influenced enrollment among low-income individuals included the educational level of the household head, number of household members, employment status, gender, and receipt of the Indonesia Smart Program (PIP). Poverty was found to have a statistically significant negative effect on GER in higher education, indicating an inverse relationship. Limited access, including entrance fees, tuition (UKT), and transportation costs, remain major barriers to participation in tertiary education (Putri, 2024; Utami, Djunarto, & Sahetapy, 2024; Suhendar et al., 2024).

Regional government spending in the education sector reflects a fiscal commitment to ensuring equitable and inclusive access to education. Local governments that allocate a larger share of their budget to education are generally better positioned to provide facilities, scholarship programs, and other forms of educational support that directly contribute to increasing the Gross Enrollment Ratio (GER). Reports on regional budget analysis indicate that consistent and well-targeted educational expenditure can significantly improve GER, particularly in areas characterized by high levels of social inequality (Kemendikbudristek, 2022).

The impact of unemployment on higher education enrollment is complex and context-dependent. In general, unemployment may exert a positive influence on enrollment rates when high joblessness particularly among high school or vocational school graduates leads individuals to recognize that secondary education is insufficient for competing in the labor market. This implies that fluctuations in the labor force can influence unemployment levels, which in turn affect individuals' decisions to pursue higher education (Marhayuningtyas & Winanto, 2023). Conversely, a negative effect may arise when household heads or other productive family members are unemployed,

reducing overall household income and making the cost of higher education a considerable burden. This suggests that income inequality and joblessness can hinder access to higher education in Indonesia (Agusalim et al., 2022). Several studies support this, finding that unemployment rates have a negative impact on tertiary enrollment (Putri & Amalia, 2024; Djunarto & Sahetapy, 2024). However, research by Habibah et al. (2019) found that unemployment did not significantly affect changes in the gross enrollment ratio in higher education in Indonesia.

METHODOLOGY

Quantitative research is an objective approach that involves the collection and analysis of numerical data, followed by statistical testing (Laily, 2022). The aim of this study is to identify the factors that influence the gross enrollment ratio in higher education (GERHE) in Indonesia and to explore policy measures that the government can implement to increase public interest in pursuing tertiary education. The study employs secondary data obtained from the Central Statistics Agency (BPS) and the Directorate General of Treasury (DJPb) under the Ministry of Finance. Utilizing panel data from 34 provinces over the 2018–2024 period, the analysis includes GERHE as the dependent variable. The independent variables consist of GRDP growth rate, population growth, poverty rate, government expenditure in the education sector, and the open unemployment rate.

Table 1. Variable Operational Definition

Variable	Symbol	Unit
Dependent	College Gross Participation Rate	% (persentase)
Independent	PDRB Perkapita Population Growth Poverty Government Spending in the Education Sector Unemployment	% (persentase)

To support the author's argument, a literature review was conducted that includes a descriptive analysis of relevant journals and articles. The multiple regression equation model used in this study can be expressed as follows:

$$Yit = \alpha+\beta1X1it+ \beta2X2it+\beta3X3it+ \beta4X4it+ \beta5X5it+ \varepsilon it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..(1)$$

The model is then specified by incorporating the variables to be analyzed, as follows:

$$GERHEit=\alpha+\beta1PDRBit+\beta2POPGRit +\beta3POVit+\beta4GOVit+\beta5UNEMPit+\varepsilon it\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Information :
$GERHE_{it}$: Gross Enrollment Ratio In Higher Education
$POPGR_{it}$: Population Growth
POV_{it} : Poverty
GOV_{it} : Government Expenditure In The Education Sector
$UNEMP_{it}$: Unemployment
α : Constant
$\beta 1 - \beta 5$: Regression Coefficients
ε_{it} : Error Term

The equation model explains that Yit represents dependent variable, Xit denotes independent variables, i indicates the individual (province), and t represents the time period. εit denotes the residual component associated with cross-sectional unit i at time t. The model interpretation is carried out through Fixed Effect, Common Effect, and Random Effect methodologies.

RESULTS AND DISCUSSION

Descriptive statistics involve the processes of collecting, organizing, summarizing, and presenting data in a manner that enhances interpretability, readability, and understanding for data users. In this study, descriptive statistical analysis is employed to provide a general overview of the dataset, focusing on measures such as the mean, minimum values, and standard deviations of each variable. The variables analyzed include the gross enrollment ratio in higher education (GERHE) as the dependent variable (Y), and the independent variables: GRDP per capita (X1), population growth rate (X2), poverty rate (X3), government expenditure in the education sector (X4), and open unemployment rate (X5). The results of the descriptive statistical test are presented in Table 2.

Table 2. Descriptive Statistics

	Y	PDRB	KMSK	PNDK	GOV	UNEMP
Mean	35.68	71130.35	10.13	2.45	3.09577E +12	5.11
Median	35.07	53938.5	8.73	2.05	1.80452E +12	5.38
Maximum	44.65	344350	15.83	5.54	2.17788E +13	6.91
Minimum	25.59	18418	5.7	0.74	2.33282E +11	3.11
Std. Dev.	6.19	1.96	3.49	1.44	1.22	1.09

Source : data processed by the author, 2025

The dependent variable (Y), representing the gross enrollment ratio in higher education, has a mean value of 35.68% with a standard deviation of 6.19. The maximum and minimum values are 44.65% and 25.59%, respectively. The median value of 35.07% indicates that the data distribution is relatively symmetrical around the mean. The GRDP variable shows an average value of 71,130.35 with a standard deviation of 1.96. The maximum value is 344,350, while the minimum is 18,418, suggesting the presence of provinces experiencing negative economic growth, indicative of economic contraction. This is further supported by the median value (53,938.5), which is lower than the mean.

The average poverty rate stands at 10.14%, with a standard deviation of 3.49. The minimum and maximum values are 5.70% and 15.83%, respectively, and the median is 8.73%. The relatively wide range reflects significant disparities in poverty levels across regions. The population growth variable has a mean of 2.45 with a standard deviation of 1.44. The median value is 2.05, while the maximum and minimum are 5.54 and 0.74, respectively. These figures indicate considerable variation in educational attainment levels among the observed regions. Government expenditure (GOV) in the education sector shows an average of 3.09577E+12, with a standard deviation of 1.22. The maximum and minimum values are 2.17788E+13 and 2.33282E+11, respectively, while the median value of 1.80452E+12 suggests a relatively normal and homogeneous distribution. The unemployment variable has an average of 5.11%, a standard deviation of 1.08, a minimum of 3.11%, and a maximum of 6.91%, with a median of 5.38%. These statistics indicate a moderate degree of variation in unemployment levels across provinces.

Overall, the descriptive analysis indicates that all variables exhibit considerable variation in their data distribution, with moderate to high standard deviations observed particularly in the variables representing government expenditure (PE), poverty (KMSK), and population growth (PNDK). These findings are essential for understanding the initial characteristics of the dataset prior to conducting regression analysis or examining the relationships among variables.

Table 3. Chou Test Results and Hausman Test

Chow Test			
Effect Test	Stat.	d.f.	rob.
Cross-sect. F	73.842	-6.36	
Cross-sect. Chi-sq.	126.82	6	
Hausman Test			
Test Summary	Chi-Sq. Stat.	Chi-Sq. d.f.	rob

Cross-sect. random	443.0.53	6	

Source : data processed by the author, 2025

The results of the Chow and Hausman tests, as presented in Tables 3, show that both the F cross-section and Chi-square cross-section values are below the significance threshold of α = 0.05. This outcome supports the acceptance of the alternative hypothesis (H_1), indicating that the Fixed Effect Model is more appropriate than either the Common Effect Model or the Random Effect Model.

Table 4. Multicollinearity test results

		PDRB	PNDK	KMSK	GOV	UNEMP
PE		1.000	0.041	0.031	0.058	-0.401
PNDK		0.041	1.000	-0.258	-0.003	0.447
KMSK		0.031	-0.258	1.000	-0.425	-0.215
IPM		0.058	-0.003	-0.425	1.000	0.159
		-0.401	0.447	-0.215	0.159	1.000

Source : data processed by the author, 2025

Based on Table 4, the results of the multicollinearity test indicate that there is no multicollinearity problem among the independent variables, as all correlation values fall below the threshold of 0.8. This suggests that the independent variables used in this study are not highly correlated, thereby confirming the absence of multicollinearity issues in the regression model.

Table 5. Heteroscedasticity Test Results

Variable	Prob.
C	0.1900
PDRB	0.8745

POPGR	0.4230
POV	0.3123
GOV	0.1183
UNEMP	0.0637

Source : data processed by the author, 2025

According to Table 5, the results of the heteroscedasticity test show that all independent variables have probability values greater than 0.05. This indicates the absence of heteroscedasticity in the panel regression model. Consequently, the classical assumption of homoscedasticity (constant variance of residuals) is satisfied, suggesting that the model is relatively stable and efficient.

Table 6. Regression Results

Y : APKPT	Panel Regression			
	Fixed Effect		Random Effect	
	Coef.	P	Coef.	P
	(std error)	Value	(std	Value
			error)	
PDRB perkapita	0.702	0.316	0.796	0.256
	0.699		0.701	
Population Growth Rate	-2.232**	0.013	-1.221***	0.003
	0.928		0.404	
Poverty	-1.069***	0.000	0.959***	0.000
	0.148		0.135	
Education Spending	1.130**	0.003	0.936**	0.01
	0.369		0.372	
Open Unemployment Rate	0.452**	0.000	0.464***	0.000
	0.147		0.122	

Konstanta	5.160	0.760	4.543	0.789
	16.857		16.989	
R-square	0.990		0.984	
F-statistcs	0.000		0.000	
Number of Obs	238		238	
Number of Group	34		34	

Source : data processed by the author, 2025

Based on the panel regression estimation using the Fixed Effect model, several key findings were obtained regarding the influence of independent variables on the Gross Enrollment Ratio in Higher Education (GERHE).

The Fixed Effect model indicates that GRDP per capita has a positive coefficient of 0.702; however, this relationship is not statistically significant, with a p-value of approximately 0.316. This suggests that although GRDP per capita theoretically reflects household purchasing power and welfare, it does not significantly affect higher education participation when viewed across provinces. This finding aligns with Habibah et al. (2019), who found that regional economic indicators such as GRDP per capita do not exert a significant influence on tertiary education enrollment despite showing a generally positive correlation.

Meanwhile, the population growth rate demonstrates a negative and statistically significant effect on GERHE, with a coefficient of -2.232 and a p-value of 0.013. This implies that a 1% increase in population growth is associated with a 2.232-point decline in the higher education participation rate. This outcome indicates that rising population numbers are not accompanied by proportional increases in access and capacity in higher education institutions. Ayuningtyas & Islami (2022) suggest that geographic and economic disparities, such as uneven distribution between urban and rural areas, are key contributors. In regions experiencing rapid population growth without corresponding higher education development, educational mobility is hindered. Students may choose not to pursue higher education due to distant or inadequate facilities. Similarly, Flanagan and Doyle (2024), in their study of the United States, found that geographic proximity to higher education institutions is positively associated with college enrollment, offering an important reference for Indonesia in addressing limited higher education access.

The poverty variable exhibits a negative and statistically significant effect on the Gross Enrollment Ratio in Higher Education (GERHE). The regression coefficient of -1.069 with a p-value of 0.000 implies that a 1% increase in the poverty rate leads to a 1.069-point decrease in GERHE. This finding suggests that higher poverty levels within a region are associated with lower participation in

higher education, indicating substantial financial barriers to educational access. This aligns with previous studies highlighting that tuition fees, entry costs, and transportation are among the major obstacles preventing individuals from pursuing higher education (Putri, 2024; Utami, Djunarto, & Sahetapy, 2024; Suhendar et al., 2024). Meanwhile, the government expenditure on education variable shows a positive and statistically significant relationship with GERHE, indicated by a regression coefficient of 1.130 and a p-value of 0.003. This suggests that an increase in local government education budgets directly correlates with a rise in higher education participation. Government investment in education positively impacts enrollment rates, which in turn contributes to economic growth through the enrollment-growth chain effect (Lestari, 2017).

The Open Unemployment Rate (OUR) is also found to have a positive and significant effect on GERHE. With a coefficient of 0.452 and a p-value of 0.000, the results indicate that a 1% increase in the unemployment rate leads to a 0.452-point increase in the higher education enrollment rate. This finding implies that rising unemployment encourages individuals to pursue further education to improve their qualifications and competitiveness in the labor market. Supporting this, a study in the United States by Sorensen and Hwang (2021) revealed that local layoffs during the Great Recession led to increased college enrollments. Specifically, a 1-percentage-point rise in local unemployment increased rural college enrollments by 10.0%, compared to 5.2% in areas adjacent to metropolitan cities, and no significant increase in metropolitan areas. This surge in rural college enrollment was primarily driven by students enrolling in or continuing associate degree programs and by students transferring from two-year to four-year institutions.

Based on the regression estimation results, the panel regression equation model can be formulated as follows:

$$GERHEit=5.160-2,232POPGRit-1.069POVit+1.130GOVit+0,452UNEMPit+\varepsilon it \quad \text{.....(2)}$$

The estimated regression model provides insights into the effects of each independent variable on the Gross Enrollment Ratio in Higher Education (GERHE). The poverty variable shows that a 1% increase in the poverty rate leads to a decrease in GERHE by approximately 1.069 percentage points. Similarly, the population growth variable has a significantly negative impact, where a 1% rise in population growth reduces GERHE by 2.232 percentage points. Conversely, government spending in the education sector has a significantly positive influence: every one-unit increase in education expenditure (GOV) increases GERHE by 1.130 percentage points. Additionally, the open unemployment rate demonstrates a positive effect, as a 1% increase in unemployment is associated with a 0.452-point rise in GERHE, indicating a potential tendency to pursue higher education when employment prospects decline.

Overall, the model yields an R-squared value of 0.990, indicating that approximately 99% of the variation in GERHE is explained by the independent variables included in the model. The statistically significant F-statistic (p-value = 0.000) confirms that the regression model is robust and appropriate for

explaining the relationship between macroeconomic indicators and higher education participation in Indonesia.

CONCLUSIONS AND RECOMMENDATIONS

This study investigates the economic and demographic factors influencing the Gross Enrollment Ratio in Higher Education (GERHE) in Indonesia from 2018 to 2024 using panel data across 34 provinces and the Fixed Effects Model approach. The findings reveal that several variables have a statistically significant effect on GERHE at the provincial level. Firstly, population growth and poverty rates exhibit a significant negative relationship with GERHE, indicating that an increase in population and higher poverty levels tend to reduce participation in higher education. Secondly, regional government spending on education and the open unemployment rate show significant positive effects, suggesting that increased educational budgets and rising unemployment can encourage individuals to pursue higher education. The regression model demonstrates a strong explanatory power, with an R^2 value of 0.990, indicating that 99% of the variation in GERHE can be explained by the independent variables in the model. These findings highlight the importance of policy interventions focused on education budgeting, equitable distribution of higher education infrastructure, and targeted support for impoverished populations and high-growth areas to enhance access and participation in higher education across Indonesia.

This study recommends diversifying scholarship schemes to increase higher education participation rates (GERHE) in underdeveloped, frontier, and outermost (3T) regions of Indonesia. The government should develop more varied and context-sensitive scholarship models tailored specifically to prospective students from 3T areas, addressing the persistent economic, geographic, and social barriers that hinder access to higher education. One proposed strategy is to design exclusive scholarship programs with independent selection pathways specifically for students from 3T regions, thus avoiding direct competition with applicants from more developed areas.

FURTHER STUDY

This study examined the determinants of the gross enrollment rate in higher education in Indonesia from 2018 to 2024 using macro-level data. Future research could extend this analysis by incorporating regional comparisons to identify disparities between urban and rural areas or among provinces. Additionally, using micro-level household survey data may help uncover individual-level factors such as parental education, income, gender, and access to digital learning infrastructure that influence higher education participation. Employing a mixed-methods approach combining quantitative data with qualitative interviews could also provide richer insights into cultural and social barriers to higher education access. Finally, assessing the long-term effects of education policies or scholarship programs through longitudinal studies would further strengthen the understanding of what drives enrollment growth in Indonesia's higher education system.

ACKNOWLEDGMENT

The authors would like to express their sincere appreciation to the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia and the Central Statistics Agency (BPS) for providing the data that made this study possible. Gratitude is also extended to the academic advisors and colleagues at [Your University/Institution Name] for their guidance and constructive feedback throughout the research process. Lastly, we thank all individuals and institutions that contributed directly or indirectly to the successful completion of this study.

REFERENCES

Abdillah, F. (2024). Peran Perguruan Tinggi dalam Meningkatkan Kualitas Sumber Daya Manusia di Indonesia. *Educazione : Jurnal Multidisiplin , Vol. 1 No. 1 (2024): Educazione*. https://doi.org/10.37985/educazione.v1i1.4

Armaatus Solicha, F., Dwi Agustin, I., Putri Wahyu Efendi, S., Arisetyawan, K., & Nilasari, A. (2024). Pengaruh IPM dan UMK Terhadap Tingkat Partisipasi Angkatan Kerja di Jawa Tengah. In *Journal Of Economics* (Vol. 4, Issue 3). https://ejournal.unesa.ac.id/index.php/independent

Ayuningtyas, A., & Sari Islami, F. (2022). Analisis Perkembangan Penduduk Terhadap Tingkat Partisipasi Angkatan Kerja Di Indonesia. *Transekonomika: Akuntansi, BisniS Dan Keuangan*, *6*(6). https://doi.org/10.55047/transekonomika.v2i6.281

Azzahra, P. A., & Hajarisman, N. (2022). Penggunaan Small Area Estimation dengan Fay-Herriot pada Angka Partisipasi Kasar Perguruan Tinggi di Provinsi Jawa Barat Tahun 2019. *Bandung Conference Series: Statistics*, *2*(2), 27–34. https://doi.org/10.29313/bcss.v2i2.3031

Fatah, A., Suhaili, M., & Farida, I. (2021). Analisis Indikator Pendidikan: Partisipasi Pendidikan di Indonesia Periode 1994-2018. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, *7*(3), 555. https://doi.org/10.33394/jk.v7i3.3516

Fatimah, S., Abdurrahmansyah, & Badarudin, K. (2023). Peran Perguruan Tinggi Dalam Mengembangkan Pendidikan di Era Industri 4.0. *TAFANI : Jurnal Pengabddian Kepada Masyarakat*, *Vol. 1 No. 1 (2023): TAFANI: Jurnal Pengabdian Kepada Masyarakat*. https://doi.org/10.19109/.v1i1

Flanagan, C. J., & Doyle, W. R. (2024). Measuring Geographic Opportunity for Higher Education in US Metropolitan Areas. *Higher Education Policy*. https://doi.org/10.1057/s41307-024-00381-0

Guijarro-Garvi, M., Miranda-Escolar, B., Cedeño-Menéndez, Y. T., & Moyano-Pesquera, P. B. (2022). Education as a dimension of human development: A

Provincial-level Education Index for Ecuador. *PLoS ONE*, *17*(7 July). https://doi.org/10.1371/journal.pone.0270932

Habibah, P., & Putra, D. P. (2019). Factors Influencing the Higher Education Enrollment Rate on 32 Provinces in Indonesia Year. *Jurnal Anggaran Dan Keuangan Negara Indonesia*, *1*(1). https://anggaran.e-journal.id/akurasi

Istiqomah, N. P., & Wulansari, I. Y. (2022). Estimasi Angka Partisipasi Kasar Perguruan Tinggi Level Kabupaten/Kota di Pulau Kalimantan Tahun 2020 dengan Small Area Estimation Hierarchical Bayes Beta-Logistic. *Seminar Nasional Official Statistics*, *2022*(1), 137–146. https://doi.org/10.34123/semnasoffstat.v2022i1.1225

Kardina, M., & Magriasti, L. (2023). Peran Pendidikan Yang Berkualitas Terhadap Pertumbuhan Ekonomi Suatu Negara. *Jurnal Pendidikan Tambusai*, *7 No. 3*, 28271–28277. https://doi.org/10.31004/jptam.v7i3.11385

Mukhaiyar, U., Rontos, F., Handoko, K., & Kardiyanti, S. (2022). Analisis Faktor-Faktor yang Memengaruhi Angka Partisipasi Kasar SMA/Sederajat di Indonesia Menggunakan Regresi Ridge. *Euler : Jurnal Ilmiah Matematika, Sains Dan Teknologi*, *10*(2), 222–234. https://doi.org/10.34312/euler.v10i2.15903

Nurjanah, S. (2024). Factors Affecting Gross Enrollment Rates in Higher Education in Indonesia. *International Journal of Applied and Advanced Multidisciplinary Research*, *2*(3), 243–258. https://doi.org/10.59890/ijaamr.v2i3.1566

Rahma Dila Amalia Putri. (2024). *Determinan Angka Partisipasi Kasar Pendidikan Tinggi Pada 14 Provinsi Di Indonesia Proposal Skripsi*.

Safira, N., & Wibowo, Y. H. (2021). Angka Partisipasi Kasar dan Angka Partisipasi Murni sebagai Indikator Keberhasilan Pendidikan Indonesia. *PAKAR Pendidikan*, *19*(2), 101–115. https://doi.org/10.24036/pakar.v19i2.212

Sorensen, L. C., & Hwang, M. (2021). The Importance of Place: Effects of Community Job Loss on College Enrollment and Attainment Across Rural and Metropolitan Regions. *AERA Open*, *7*. https://doi.org/10.1177/2332858421997170

Suryana, Y., & Pradana, R. S. (2023). Angka Partisipasi Kasar Perguruan Tinggi, Sma Dan Smp Menurut Provinsidan Menurut Gender Serta Hubungannya Dengan Tingkat Pengangguranterbuka. *Jurnal*

Kewidyaiswaraan, *8 (1)*, 29–37.

Utami, Y., Djunarto, & Sahetapy, W. (2024). Kemiskinan Perkotaan dan Angka Partisipasi Pendidikan Tinggi di Indonesia. *Jurnal EMT KITA*, *8*(2), 759–766. https://doi.org/10.35870/emt.v8i2.2439

Zahroh, S., & Pontoh, R. S. (2021). Education as an important aspect to determine human development index by province in Indonesia. *Journal of Physics: Conference Series*, *1722*(1). https://doi.org/10.1088/1742-6596/1722/1/012106