

An Analysis of Poverty and Economic Growth Based on Unemployment, Coffee Production, and Tourism Potential in Bener Meriah Regency

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Abstract

This study aims to examine the factors that influence poverty and economic growth in Bener Meriah Regency. Utilizing a quantitative approach and a simultaneous regression method, the study analyzes the effect of economic growth, unemployment, and education on poverty, as well as the influence of coffee production, tourism potential, and job opportunities on regional economic growth. The findings indicate that economic growth significantly contributes to reducing poverty levels, whereas unemployment and education have no statistically significant impact. These results suggest that accelerating economic growth serves as the primary instrument in alleviating poverty in the region. The study recommends the adoption of inclusive development strategies focused on key sectors, accompanied by improvements in human capital quality and the integration of labor policies to support equitable and sustainable growth.

Keywords: Poverty, Economic Growth, Gayo Coffee, Tourism, Employment Opportunities, Bener Meriah Regency

INTRODUCTION

Bener Meriah Regency encompasses lowland and mountainous areas covering an area of 1,941.61 square kilometers. Syiah Utama District is the largest in terms of administrative area, comprising 41.96% of the regency's total area, whereas Bener Kelipah District is the smallest, occupying only 1.38%. The farthest district from the regency capital is also Syiah Utama, with its capital, Samar Kilang Village, located approximately 50.3 km from the regency center in Simpang Tiga Redelong.

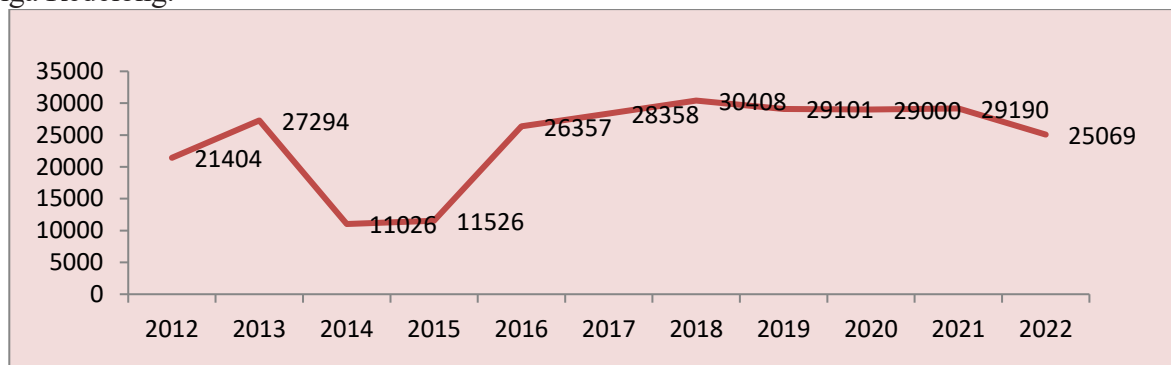


Figure 1. Coffee Production in Bener Meriah Regency (tons)

Agricultural commodities in Bener Meriah are led by the plantation sector, particularly coffee cultivation. Bener Meriah and Central Aceh are the two main coffee-producing regencies in Aceh Province. The increasing productivity of Gayo coffee in Bener Meriah over the years, such as in 2018, has contributed positively to the local economy and the well-being of Gayo coffee farmers, who constitute the majority of the population. In 2021, the total coffee production reached 2,882 thousand tons, with a planted area of 47,273 hectares. Coffee plantations are distributed across all districts, with planted areas ranging from 0.83 to 10,143 thousand hectares.

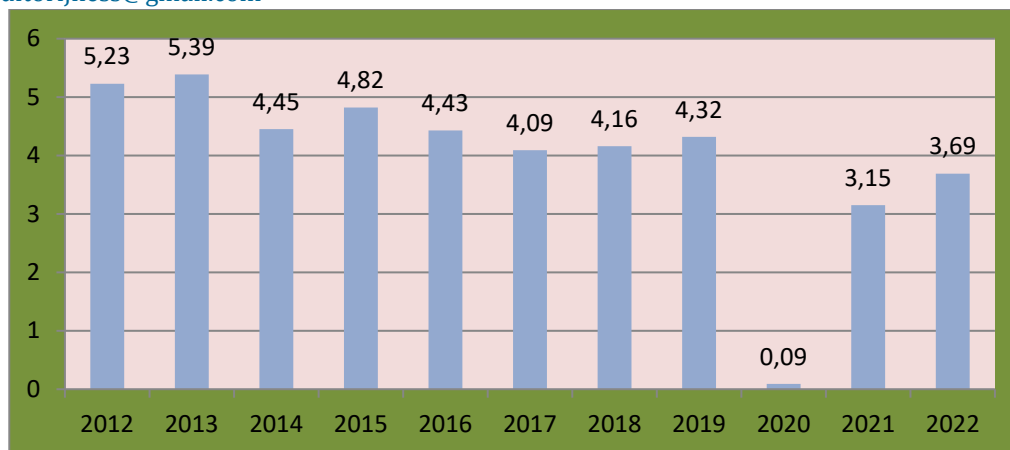


Figure 2. Economic Growth of Bener Meriah Regency (%)

In 2022, Bener Meriah experienced an economic growth rate of 3.69%, ranking second in the Gayo Highlands, with Central Aceh leading at 4.90%. As economic growth improved, extreme poverty levels declined. According to Devi, the Head of BPS Bener Meriah (March 8, 2023), this economic growth was driven by several rapidly developing sectors, particularly agriculture. Devi emphasized the importance of enhancing this sector alongside supportive infrastructure, such as adequate Information and Communication Technology (ICT). The Gross Regional Domestic Product (GRDP) of Bener Meriah has increased annually, contributing to the overall economic performance of Aceh Province and highlighting the regency's significant role in the province's economic advancement (Aulia Putra et al., 2022).

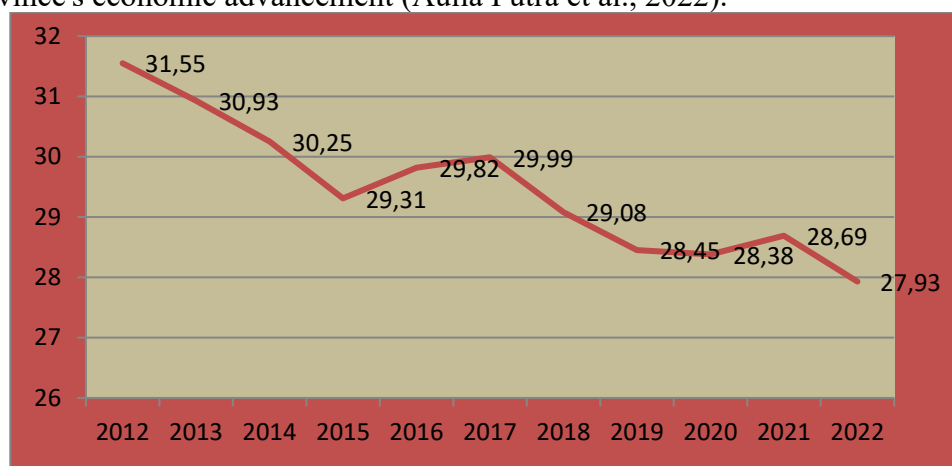


Figure 3. Number of Poor Residents in Bener Meriah Regency

Between 2012 and 2022, the poverty rate in Bener Meriah declined—from 31.55 thousand residents in 2012 to 18.39 thousand in 2022. Although both the number and percentage of poor residents decreased, the poverty depth and severity indices rose. The increase in the poverty depth index indicates that although fewer people are poor, their average expenditure has moved further below the poverty line, with a score of 3.54 in 2022, down from the previous year. Poverty remains a persistent challenge in developing countries like Indonesia. Hari (2017) suggests that poverty, from a socio-psychological perspective, stems from a lack of social networks and structures that can enhance productivity. Despite various government initiatives aimed at poverty alleviation, such efforts are insufficient given the multifaceted nature of poverty, which involves not only economic but also health, education, political, and institutional dimensions (Haris, 2018). Thus, poverty alleviation requires a multidimensional approach that includes not only individual but also cultural and structural factors within society (Poluakan, 2019)

RESEARCH METHODS

Before proceeding with the Two-Stage Least Squares (2SLS) estimation, each equation must satisfy identification requirements. An equation is considered “identified” if it can be statistically expressed in a unique form and produces distinct parameter estimates (Sumodiningrat, 2001). To meet these requirements, one or more variables included in a particular equation must not appear in others (Rusiadi, 2014). Identification can be achieved by adding, removing, or modifying exogenous or endogenous variables within the model (Sumodiningrat, 2001). The analytical framework used in this study adopts a system of simultaneous equations, structured as follows:

Equation 1: $\text{Log(KMS)} = C(10) + C(11) * \text{log(PNG)} + C(12) * \text{log(Population)} + C(13) * \text{log(PE)}$

Equation 2: $\text{Log(PE)} = C(20) + C(21) * \text{log(PKP)} + C(22) * \text{log(PW)} + C(23) * \text{log(KMS)}$

RESULT AND DISCUSSION

The estimation to determine the interdependent variables in the two equations was conducted using the 2SLS (Two-Stage Least Squares) method, with the results summarized as follows:

Table 1. Summary of 2SLS Estimation Results Dependent Variable: Poverty

Kemiskinan	Coefficient	Std. Error	t-Statistic	Prob.
C(10)	702.3613	452.6432	1.551689	0.1225
C(11) PGG	-7.307547	35.46446	-0.206053	0.8370
C(12) PDDK	-3.316022	107.6794	-1.268601	0.2062
C(13) PE	-0.340397	86.05895	-1.499434	0.0355
R-squared	0.129606			
Economic Growth				
C(20)	3.110370	0.294787	10.55124	0.0000
C(21) PK	7.122308	8.61E-07	0.082737	0.9342
C(22) PP	-0.478925	0.066703	-7.179978	0.0000
C(23) KK	0.150123	0.030566	4.911411	0.0000
R-squared	0.558275			

Poverty Equation: $\text{Poverty} = - 702.3613 - 7.307547 * (\text{Unemployment}) - 3.316022 * (\text{Population}) - 0.340397 * (\text{Economic Growth})$. The R-squared value of 0.129 indicates that unemployment, population, and economic growth collectively explain approximately 12.9% of the variance in poverty, while the remaining 87.1% is influenced by external factors not included in the model. Economic Growth Equation: $\text{Economic Growth} = 3.110370 + 7.122308 * (\text{Coffee Production}) - 0.478925 * (\text{Tourism Potential}) + 0.150123 * (\text{Poverty})$. The R-squared of 0.5583 indicates that the model explains 55.8% of the variance in economic growth, with the rest influenced by other unaccounted factors.

Discussion

Poverty Equation Results

The findings show that among the variables tested, only economic growth has a statistically significant effect on poverty reduction in Bener Meriah Regency. Unemployment and population do not exhibit significant influence. This aligns with the core theory of growth elasticity of poverty, which posits that higher per capita income leads to a reduction in poverty. Empirically, a 1% increase in income can result in up to a 3% reduction in poverty in developing

countries. Empirical evidence from Indonesia supports these findings. A panel data study from 1990–2017 confirmed that economic growth and unemployment had significant long-term impacts on poverty, with growth being the dominant factor. Research in South Kalimantan (2022) also indicated that growth significantly reduced poverty, while the influence of education and unemployment was marginal. Several factors may explain the insignificant effect of unemployment and population: Underreported structural unemployment: Official data may not capture underemployment or informal sector work, prevalent in rural economies. Quality and relevance of education: Educational indices may be statistically insignificant if local education quality is poor or mismatched with market needs. Distributional gaps: In the context of the Galor–Zeira model, lack of credit access and market participation can prevent education and employment from improving welfare.

Research in Bali (2002–2021) showed unemployment significantly affected growth, but the context differed economic growth in Bener Meriah was the stronger factor. International studies also affirm the long-term significance of variables like education and unemployment, although local market conditions often determine their real impact. The results suggest that in Bener Meriah, efforts to reduce poverty should focus on: Promoting inclusive growth: Enhance productivity in key sectors like agriculture and micro-enterprises. Improving education quality: Prioritize teacher capacity, vocational training, and curriculum relevance. Expanding decent employment: Especially in productive sectors, with skills programs targeted at low-income groups. Aligning social and economic policies: Integrate cash assistance, microcredit, and infrastructure programs with regional growth strategies. Overall, the dominant role of economic growth in reducing poverty in Bener Meriah aligns with global and regional patterns, emphasizing the importance of inclusive and sector-driven development.

Results of the Economic Growth Equation

The results from the economic growth equation indicate that only coffee production and tourism potential have a statistically significant impact on regional economic growth in Bener Meriah Regency. On the other hand, employment opportunities do not show a significant influence. The finding that the coffee sector, particularly the production and processing of Gayo Arabica coffee, significantly contributes to Bener Meriah's economic growth is consistent with prior research. Rahmaddiansyah et al. (2022), in a study on Central Aceh, concluded that coffee production positively influences poverty reduction through asset growth and increased household income. Furthermore, Hasibuan et al. (2023) revealed that improvements in coffee quality achieved through certification and enhanced post-harvest handling boost the economic standing of local farmers. Theoretically, growth based on export commodities such as premium coffee enhances foreign exchange earnings, local employment, and investment in supporting sectors. This aligns with Ricardo's theory of comparative advantage and the export-based regional growth model. Research by Rifin & Naully (2020) on coffee cooperatives in Indonesia confirms that optimized value chains and direct export access raise farmers' income and market competitiveness.

The second key finding is the significant positive effect of tourism on economic growth. This aligns with findings by Dwi Rahmayani et al. (2022), who demonstrated that domestic tourism indicators such as the average length of tourist stays significantly affect the GRDP of Indonesian provinces. A study in the *International Journal of Sustainable Development and Planning* (2024) also confirmed that domestic tourism boosts regional growth and employment absorption. Globally, a meta-analysis by Giotis (2022) supports these findings, highlighting tourism's role in job creation and economic expansion. Infrastructure development in tourism

villages, cultural preservation, and enhanced services serve as accelerators of local economic growth, particularly in regions like Bener Meriah, which boast natural and cultural attractions.

Despite this positive growth momentum in coffee and tourism, employment opportunities do not significantly influence economic growth. Several explanations support this: Limited formal job creation: Growth in export and tourism sectors often relies on seasonal or informal labor, thus not significantly increasing formal employment. Low quality and small-scale production: Studies in Central Aceh (Hasibuan, 2023) show that limitations in crop quality and production scale reduce the potential for formal job creation. Dominance of domestic tourism: A focus on local visitors rather than international tourism results in lower economic multipliers, reducing potential employment impacts.

Skills mismatch: If the local workforce lacks the skills required by high-value coffee industries or modern tourism services, job absorption remains limited despite economic growth. Several earlier studies reinforce the conclusion that local commodity-based sectors and tourism significantly contribute to regional economic growth. Rahmaddiansyah et al. (2022) emphasized that increased production and productivity of Arabica Gayo coffee directly raise household incomes and strengthen local economies in highland areas like Bener Meriah and Central Aceh. Similarly, Hasibuan et al. (2023) noted that strengthening the coffee supply chain from upstream to downstream positively impacts regional growth. They stressed the importance of improving post-harvest processes, market access, and farmer institutions in accelerating agribusiness development. Rifin and Naully (2020) also found that coffee cooperatives with direct export access generate greater added value and competitiveness, thus enhancing local economic growth.

Tourism's contribution to growth is well-documented in literature. Rahmayani et al. (2022) found that increased tourist visits and longer stays significantly influence the GRDP of the service sector. This shows that tourism supports regional economies by stimulating sectors like trade, transport, and MSMEs. This is further supported by Giotis (2022), who conducted a cross-country analysis showing tourism's substantial contribution to regional economic and employment growth particularly in areas rich in natural and cultural heritage and supported by proper infrastructure and destination management. Likewise, Nguyen et al. (2020) found that sustainable tourism development in ASEAN countries accelerates growth in underdeveloped regions and produces a multiplier effect in local communities.

Conversely, other studies reveal that employment variables do not always have a direct effect on economic growth. This may be due to the predominance of informal work, insufficient job quality, or a mismatch between labor supply and market needs. Djumadi and Asmara (2021) in Eastern Indonesia found that although job availability increased, most workers were absorbed into low-productivity informal sectors, limiting their contribution to growth. These findings resonate with conditions in Bener Meriah, where job creation has yet to emerge as a significant driver of economic expansion.

CONCLUSION

This study reveals that within the context of Bener Meriah Regency, the dynamics between poverty and economic growth demonstrate differing relationships with the variables analyzed. In the poverty equation, only the variable of economic growth significantly influences the reduction of poverty levels. Meanwhile, unemployment and education do not show statistically meaningful associations. These findings reinforce the notion that high-quality economic growth remains the most decisive factor in poverty reduction, especially in rural areas where primary sectors dominate. The absence of significant effects from education and unemployment may be attributed to limited access, the misalignment between education and local labor markets, and the dominance of the informal sector, which is often unaccounted for in

conventional indicators. On the other hand, the economic growth equation shows that only coffee production and tourism potential have a significant impact on enhancing regional economic performance, whereas employment opportunities do not yield a statistically significant effect. This indicates that Bener Meriah's economic strength lies in its sectoral comparative advantages particularly in Gayo coffee and natural-cultural tourism. However, the growth observed in these sectors has yet to be accompanied by a corresponding increase in the absorption of formal or quality employment.

Consequently, future regional development strategies should focus on strengthening key sectors grounded in local resources while simultaneously promoting labor inclusivity and educational improvements that align with the demands of the regional job market.

REFERENCES

- Alkhoiriyah, S. F., & Sa'roni, C. (2021). The Impact of Human Development Index (HDI) and Unemployment on Economic Growth in Banjarmasin City. *JIEP: Jurnal Ilmu Ekonomi dan Pembangunan*, 4(2), 299–309.
- Ariani, M. B., & Nani, I. A. J. (2021). Composite Indicators Analysis of HDI and Poverty on Economic Growth in Banten Province. *Jurnal Dinamika Ekonomi dan Bisnis*, 18(01), 1–12.
- Djumadi, & Asmara, I. (2021). Analyzing Job Opportunities and Informal Sector Productivity toward Regional Economic Growth. *Jurnal Ekonomi dan Pembangunan Daerah*, 13(2), 89–102.
- Giotis, G. P. (2022). Tourism as a Catalyst for Economic Growth and Employment: Evidence from International Panel Data. *International Journal of Tourism Research*, 24(4), 502–517. <https://doi.org/10.1002/jtr.2543>
- Hasibuan, M. R., Nasution, D. P., & Sembiring, A. M. (2023). Strategies for Enhancing the Value of Gayo Coffee through Strengthened Farmer Institutions. *Jurnal Agribisnis dan Pengembangan Wilayah*, 11(1), 33–42.
- Jhingan, M. L. (2016). *Development Economics and Planning* (17th ed.). Jakarta: Raja Grafindo Persada.
- Nguyen, T. T., Doan, T. N., & Tran, H. (2020). Monetary Policy and External Stability in ASEAN: A Panel ARDL Approach. *Journal of Asian Finance, Economics and Business*, 7(12), 123–131. <https://doi.org/10.13106/jafeb.2020.vol7.no12.123>
- Rahmaddiansyah, R., Mawaddah, M., & Safitri, S. (2022). The Effect of Coffee Production on Farmers' Welfare in Central Aceh. *Jurnal Agrisepe*, 23(1), 75–84.
- Rahmayani, D., Hutapea, R., & Alfian, R. (2022). The Role of the Tourism Sector in Driving Economic Growth in Indonesia. *Jurnal Pembangunan Ekonomi dan Keuangan Daerah*, 6(2), 115–128.
- Rifin, A., & Naully, D. (2020). Strategies to Increase Indonesia's Coffee Exports through Farmer Cooperative Strengthening. *Jurnal Ekonomi Pertanian dan Agribisnis*, 8(3), 150–161.
- Todaro, M. P., & Smith, S. C. (2020). *Economic Development* (13th ed.). New York: Pearson Education.
- Azizah, D. L. (2023). An Analysis of the Impact of HDI, Expected Years of Schooling, Open Unemployment Rate, and Population Size on Poverty in Aceh Province [Doctoral dissertation, Universitas Islam Indonesia].
- Dewi, N., Yusuf, Y., & Iyan, R. Y. (2017). The Influence of Poverty and Economic Growth on Human Development Index in Riau Province [Doctoral dissertation, Riau University].

- Handayani, N. (2023). The Effect of HDI, Economic Growth and Unemployment on Poverty in Central Java Districts/Cities, 2017–2019. *Diponegoro Journal of Economics*, 11(1), 26–36.
- Leni, F. (2021). Analysis of the Impact of Unemployment and Poverty on Economic Growth in West Sumatra Province, 2015–2019.
- Maulina, K. R. (2022). The Influence of Open Unemployment Rate, Economic Growth, and HDI on Poverty Levels in Aceh Province (2017–2021) from an Islamic Economic Perspective [Doctoral dissertation, UIN Ar-Raniry].
- Ningrum, J. W., Khairunnisa, A. H., & Huda, N. (2020). The Impact of Poverty, Unemployment, Economic Growth, and Government Spending on the HDI in Indonesia (2014–2018): An Islamic Perspective. *Jurnal Ilmiah Ekonomi Islam*, 6(2), 212–222.
- Novianto, S. (2018). The Effect of Economic Growth, HDI, Inflation, and Unemployment on Poverty Levels in Central Java Districts/Cities.
- Primandari, N. R. (2019). The Effect of Economic Growth and Unemployment on the HDI in South Sumatra Province (2004–2018). *PARETO: Jurnal Ekonomi dan Kebijakan Publik*, 2(2), 25–34.
- Putera, R. D. (2020). The Effect of Expected Schooling Years, Minimum Provincial Wages, and Unemployment Rates on Poverty in Indonesia: A Case Study of 33 Provinces (2010–2019) [Bachelor's thesis, UIN Jakarta].
- Q'rene, V. F., Kalangi, J. B., & Tumangkeng, S. Y. (2023). The Effect of Economic Growth, HDI, and Unemployment on Poverty in Minahasa District. *Jurnal Berkala Ilmiah Efisiensi*, 23(10), 73–84.
- Rachmawatie, D. (2021). Do Tourist Visits, Unemployment Rates, and Export Values Affect GRDP? A Case Study Before COVID-19 in Jakarta. *Jurnal Manajemen Terapan dan Keuangan*, 10(03), 368–377.
- Siskawati, N., Surya, R. Z., & Sudeska, E. (2021). The Effect of Schooling Expectations and Average Schooling Duration on Open Unemployment in Riau Districts/Cities. *Selodang Mayang: Jurnal Ilmiah Bappeda Indragiri Hilir*, 7(3), 173–177.
- Utami, F. P. (2020). The Effect of HDI, Poverty, and Unemployment on Economic Growth in Aceh Province. *Jurnal Samudra Ekonomika*, 4(2), 101–113.
- Yulianto, Y. Y. (2023). The Potential of Coffee Agro-Tourism as an Attraction for Creative Economic Tourism in Kalibogor Village, Kendal. *Khasanah Ilmu – Jurnal Pariwisata dan Budaya*, 14(2), 151–160.
- Erdkhadifa, R. (2022). Determinants of Economic Growth in East Java Using a Spatial Regression Approach. *IQTISHADUNA: Jurnal Ilmiah Ekonomi Kita*, 11(2), 122–140.
- Nainggolan, L. E., Sembiring, L. D., & Nainggolan, N. T. (2021). The Influence of Economic Growth on HDI and Its Impact on Poverty in North Sumatra. (Working Paper).
- Zakaria, R. (2018). The Influence of Population Size, Unemployment, Poverty, Economic Growth, and Capital Expenditures on HDI in Central Java (2010–2016).
- Nasution, L. N., Suhendi, S., Rusiadi, R., Rangkyu, D. M., & Abdiyanto, A. (2022). The COVID-19 Pandemic's Impact on Economic Stability in Eight Muslim-Majority Emerging Economies. *Atestasi: Jurnal Ilmiah Akuntansi*, 5(1), 336–352. <https://doi.org/10.57178/atestasi.v5i1.626>
- Rusiadi, R., Novalina, A., & (2018). Confirmatory Factor Analysis on Coastal Women's Economic Independence Based on Fishermen Household Welfare in Pahlawan Village. *Jurnal Kajian Ekonomi dan Kebijakan Publik (JEPA)*, 3(1), 65–74. <https://jurnal.pancabudi.ac.id/index.php/jepa/article/view/203>
- Rusiadi et al. (2017). *Research Methodology: Management, Accounting, and Development Economics – Concepts, Cases, and SPSS Applications (5th Edition)*. Medan: USU Press.

- Sembiring, R., Nasution, L. N., Faried, A. I., & Novalina, A. (2019). Determinants of Human Development Index and Their Effects on Poverty in North Sumatra Cities and Districts. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 10(6, Ser. II), 32–36. <https://doi.org/10.9790/59331006023236>
- Wongboonsin, P., Aunguroch, Y., & Hatsukano, N. (2020). Ageing Society and Human Resource Development in Elderly Care in Thailand. In *Human Resources for the Health and Long-Term Care of Older Persons in Asia* (pp. 104–135). ERIA.
- Zulkarnain, T., Hazmi, Y., Nasir, M., Faisal, F., & Husin, D. (2022). Dynamic Response of the Dependency Ratio to Government Spending in Indonesia. *The Journal of Asian Finance, Economics and Business*, 9(2), 71–79. <https://doi.org/10.13106/jafeb.2022.vol9.no2.0071>