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Identifying Increasing Poverty in Indonesia: Does the Human Development Index and Unemployment Affect Poverty in Indonesia?

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Abstract

This study aims to see the influence of the relationship between human development index (HDI) and unemployment in Indonesia. This research was conducted in the field (field research) with an approach that combines qualitative and quantitative. A qualitative approach is used to understand the context and deeper details of individual experiences, views, and interactions related to poverty, HDI, and unemployment in Indonesia. Quantitative methods use panel data regression. The results showed that the fixed effect method is the best model to see the effect of the human development index (HDI) and unemployment on poverty in Indonesia. The human development index negatively and insignificantly influences poverty in Indonesia. Unemployment has a positive and significant influence on poverty in Indonesia. This research contributes to the government improving workforce skills and preparing employment through foreign and domestic investment policies. The government should improve workforce skills and prepare employment through foreign and domestic investment policies.

Keywords: *Poverty, Unemployment, Human Development Index (HDI), Indonesian.*

1. INTRODUCTION

Poverty is a social phenomenon and is even considered a problem faced by every society around the world throughout the world. Poverty is a complex social problem that affects many aspects of human life, such as health, education, and economic opportunity (Asadullah et al., 2023; Inoue et al., 2023; Putri et al., 2023). Poverty has a complex impact on the lives of individuals and communities(Antipova, 2021; Ravaghi et al., 2023). Poverty can also lead to political, social, and economic instability (Imeokparia et al., 2023; Inoue et al., 2023; Shahid et al., 2021). Poverty can also affect unproductive economic behavior (de Bruijn & Antonides, 2022)

Poverty alleviation is a primary focus for many international institutions, governments, and non-profit organizations that seek to reduce social inequality and provide more equitable opportunities for all levels (Amadu et al., 2021; Jutte et al., 2021; Tagne et al., 2021). Despite efforts, solving the problem of poverty remains a challenge that requires a

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holistic and sustainable approach from various sectors of life(Sadath & Acharya, 2021; Santillán et al., 2020; Zhu et al., 2021)

As a developing country, Indonesia still has challenges in meeting the basic needs of its people. One of the significant challenges is poverty. The factors affecting poverty in Indonesia are complex. One of the factors that cause poverty is the Human Development Index, which is an indicator of the quality of human resources (Azam et al., 2021; Imeokparia et al., 2023; Sadath & Acharya, 2021). The Human Development Index (HDI) evaluates a country's development level by considering the conditions of education, health, and income (Chien, 2023; Lucia et al., 2022; A. Wijaya et al., 2021). Research conducted by(Imeokparia et al., 2023 Vivanco Valenzuela et al., 2021 Zhu et al., 2021) showed a significant relationship between poverty and the human development index. The results of this study highlight that there is a strong correlation between the poverty rate and the HDI value of a country. The higher the HDI of a country, the lower the poverty rate experienced by its population. The research underlines that aspects such as access to good education, adequate health, and decent income, as represented in HDI, play an essential role in reducing poverty levels in a society.

Unemployment also influences poverty because unemployment affects people's income in meeting living standards. When a person is unemployed, their income decreases or even does not exist at all, which in turn can lead to difficulties in meeting basic needs such as food, clothing, shelter, and healthcare (Antipova, 2021; Moreno et al., 2021; Rai et al., 2021). Previous research has shown a significant relationship between unemployment and poverty, highlighting that high unemployment has a direct impact on poverty rates in a society (Abdullahi & Kehinde, 2023; Amorós et al., 2019; Aubert et al., 2022; Naz, 2023). These data show that the higher the unemployment rate in a region or country, the more likely the poverty rate will increase. High unemployment can affect economic stability, limit access to decent work, and significantly reduce household income. The close relationship between unemployment and poverty has become the focus of attention in efforts to reduce social inequality and develop strategies to create job opportunities to address poverty.

This research is essential because it reflects crucial factors affecting people's well-being and lives. The HDI provides a comprehensive view of human development, including education, health, and income. The relationship between HDI and the unemployment rate provides an overview of how economic conditions, health, and education levels play a role in determining poverty rates in Indonesia. Through this research, it can be understood how education, health, and income, as measured by HDI, are related to the unemployment rate in Indonesia and how unemployment can be one of the factors causing poverty. The results of this study can provide deep insights into how improvements in aspects measured by HDI, as well as reductions in the unemployment rate, can help address the problem of poverty in Indonesia. Implementing policies aimed at increasing HDI while reducing the unemployment rate can be essential in overcoming poverty in Indonesia.

2. LITERATURE REVIEW

2.1. Poverty

Poverty is a complex subject that has been the focus of in-depth study in scientific papers, and although there is no single definition, it is generally understood as a condition in which a person or family lacks the resources to meet basic needs and participate fully in the life of society(de Bruijn & Antonides, 2022; Santillán et al., 2020; Zhou & Liu, 2022). Income, consumption, and access to fundamental services like healthcare and education are frequent poverty indicators. Other indicators include housing (Halkos & Aslanidis, 2023; Rocha et al., 2021; Sparrow et al., 2020).

Non-economic factors such as discrimination, inequality, and lack of access to opportunities also play a role in maintaining poverty, apart from economic-related reasons. According to the view of some academics, poverty is a systemic problem stemming from unfair social and economic situations, which limit people's choices and opportunities (Halkos & Aslanidis, 2023, 2023; Hancock, 2023) Poverty can be triggered by interconnected factors, such as economic inequality involving gaps in the distribution of wealth and opportunity, giving rise to income inequality and unequal access to economic resources. Limited access to quality education and decent work also has the potential to trigger poverty (Antipova, 2021; Bukari et al., 2021; de Bruijn & Antonides, 2022; Naz, 2023; Troller-Renfree et al., 2022)

2.2. Human Development Index (HDI)

The Human Development Index (HDI) is a comprehensive measure used to assess a country's level of human development. HDI includes three main dimensions, namely health (measured through life expectancy at birth), education (using average years of schooling and school enrollment rates), and standard of living (measuring real income per capita) (Amini et al., 2021; Azam et al., 2023; Dörffel & Schuhmann, 2022; Elia et al., 2020; Nai Ruscone & Fernández, 2021). By providing a holistic picture, HDI provides a deeper understanding of a country's progress than just using economic indicators

The Human Development Index (HDI) and poverty are closely related in theory. The HDI, which includes real income per capita, health, and education, provides a comprehensive picture of a country's human development. Although rising real income per capita may indicate improved living standards, unequal income distribution may cause some people to remain impoverished. In addition, limited access to quality healthcare and education can also be a contributing factor to poverty (Azam et al., 2021; Naz, 2023; Santillán et al., 2020; Vivanco Valenzuela et al., 2021; Zhu et al., 2021). Therefore, increasing overall HDI not only reflects progress in health and education but can also help reduce poverty rates by improving people's access to essential services and increasing overall incomes

The Human Development Index (HDI) is an essential economic variable, providing a comprehensive picture of a country's development. HDI not only pays attention to economic income but also includes dimensions of health and education, such as life expectancy and school enrollment rates (Amini et al., 2021; Czech et al., 2021; Imeokparia et al., 2023; Naz, 2023; Rahmawati et al., 2020; Sobral et al., 2021) By taking these aspects into account, HDI provides a holistic understanding of human well-being. In addition, HDI can reveal social and economic inequalities in society, which form the basis for more inclusive and sustainable policies. Understanding the relationship between HDI and economic factors enables governments and policymakers to design more effective development strategies to improve people's living conditions.

2.3. Unemployment

Unemployed is a condition in which a person who can work does not get a job according to his skills and desires and is actively looking for work. Unemployment can occur due to various factors, including economic changes, a mismatch between workers' skills and labor market demand, or structural problems within the labor market (Drescher & Janzen, 2021; Maximova et al., 2022; A. Wijaya et al., 2021). The unemployment rate is often measured as the percentage of the labor force actively looking for work but has not yet found one. Unemployment can hurt the economy and social well-being, including declining individual incomes and increasing economic burdens on governments (Das et al., 2021; Moreno et al., 2021; Reichelt et al., 2021; Shammi et al., 2020, 2021; Sharma et al., 2022)

The adverse effects of unemployment on the economy and social life are significant. This condition can reduce people's purchasing power because individuals who lose their jobs

cannot generate income, thus potentially lowering consumption levels and harming economic growth (Antipova, 2021; Milani, 2021; Rai et al., 2021; Sarkodie & Adams, 2020; Sparrow et al., 2020). In addition, unemployment can also result in decreased social well-being, increased psychological distress, and mental health problems in unemployed individuals. Increasing poverty rates are another direct impact, resulting in difficulties meeting basic needs such as food, housing, and education. The government's financial burden also increases with the need for social assistance and unemployment benefits. High unemployment rates can create social instability, increase tensions, and even trigger protests and riots. In addition, economic productivity may drop due to human resources that are not used effectively. Therefore, handling and preventing unemployment through government policies, skills training, and creating new jobs is essential for economic stability and social welfare.

Unemployment and poverty are closely linked, forming a mutually reinforcing cycle. When unemployment is high, society tends to experience increased poverty rates as individuals who lose their jobs face significant financial hardship (Azam et al., 2021; Drescher & Janzen, 2021). Losing a primary source of income can lead to difficulties in meeting basic needs such as food, housing, and education. On the other hand, conditions of poverty can increase the risk of unemployment, as limited access to quality education and job opportunities can create an environment where the opportunity to escape poverty becomes increasingly tricky. Unemployment can also contribute to worsening physical and mental health problems, intensifying stress on affected individuals and families. Over time, economic uncertainty and feelings of insecurity related to unemployment can create social instability that has the potential to trigger other problems, such as increased crime rates and riots. Therefore, efforts to address unemployment need to be accompanied by broader strategies to reduce poverty, including approaches that pay attention to aspects of education, skills training, and new job creation as part of an inclusive economic development strategy (Lacey et al., 2022; Maroko et al., 2020; Rahmawati et al., 2020)

3. METHODOLOGY

This research was conducted in the field (field research) with an approach that combines qualitative and quantitative(Del Río-Gamero et al., 2022; Hardinghaus et al., 2021; Sevillano-Monje et al., 2022; Wang et al., 2021; Warren & Steenbergen, 2021). A qualitative approach is used to understand the context and deeper details related to individual experiences, views, and interactions related to poverty, HDI, and unemployment in Indonesia(Chu et al., 2021; Etminani-Ghasrodashti et al., 2021; Hardinghaus et al., 2021; Köttl et al., 2021). Meanwhile, a quantitative approach is used to collect and analyze numerically measurable statistical data, such as index data, unemployment rates, and other measurable parameters related to the phenomenon(X. Chen et al., 2021; Odintsov et al., 2022; Rafique et al., 2021; Salem et al., 2021). Combining these approaches allows researchers to gain a comprehensive and detailed understanding of the relationship between HDI, unemployment, and poverty in Indonesia.

This study uses the population of all provinces in Indonesia, which amounts to 38 provinces. Sample selection in this study using purposive sampling (Abdul-Halim et al., 2022; Andrade, 2021; Jiang et al., 2021; Karakose et al., 2021; Shammi et al., 2021). This study will use five provinces as research samples to represent the population. The samples are East Java Province, West Java Province, East Kalimantan Province, South Sulawesi Province, North Sumatra Province, and West Sulawesi Province. There are several reasons, including:

Representative: The selected provinces represent various regions in Indonesia, making it possible to get a broader picture of the effect of the Human Development Index (HDI) and unemployment on poverty in Indonesia.

- Data Available: Data required for research, such as HDI, unemployment, and poverty data, are available and easily accessible for selected provinces.
- High Variance: The selected provinces have a reasonably high variation in HDI, unemployment, and poverty rates. This makes it possible to see how much influence HDI and unemployment have on poverty in regions with different characteristics.
- Economic Considerations: Selecting samples from different regions can also consider economic aspects, where the selected provinces contribute considerably to economic development in Indonesia.
- Choosing provinces following these reasons is expected to produce more representative and reliable research results to answer research questions on the effect of HDI and unemployment on poverty in Indonesia.

The test was conducted using the Panel Data Regression method. Panel data regression is a statistical method used to analyze data that combines time series and individual or location dimensions (cross-section)(Harahap et al., 2020; Marliati, 2020; Marton et al., 2020; Sunaryo et al., 2020). In this context, "panel" refers to a data structure that involves collecting information from various individuals or units of observation over a while. Regression panel data allows researchers to identify and evaluate the effects of the independent variable on the dependent variable, taking advantage of variation between individuals and across time (Ha, 2020; Ly et al., 2020; Minh et al., 2020)

The function variable model used to express the relationship between the independent variable and the dependent variable is:

$Poverty_{it} = f (HDI_{it}, Unemployment_{it})$……..(1)

and its econometric models become,

$Y_{it} = \beta 0 + \beta 1 \, LogX1_{it} + \beta 2 \, Log \, X2_{it} + + \varepsilon_i$ ……(2)

Where:

Y = Poverty

X1 = HDI

X2 = Unemployment

i = Province

t = Year (2015-2022)

ε = Interference factor (ter m error)

Three techniques can be used in discussing panel data regression model estimation techniques: the common effect model, fixed effect model, and random effect model. The question arises regarding which technique should be chosen for panel data regression. The common effect model is more straightforward than the other two (Schwingshackl et al., 2022; Sunaryo et al., 2020). Only by combining time series and cross-section data obtained without looking at differences between time and individuals can the common effect method be used to estimate panel data models (GEORGE-EDUARD et al., 2022; L. I. Wijaya et al., 2022)

The fixed effect model technique estimates panel data using dummy variables to capture intercept differences (Hernández-Vásquez et al., 2022; Zhu et al., 2021). The definition of fixed effect is based on the difference in intercept between individual units, but the intercept is the same between time (time-invariant)(García-Tizón Larroca et al., 2020; Rahmawati et al., 2020). The random effect method will estimate panel data in which interference variables may be interrelated over time and between (Kumar-M et al., 2020; Schwingshackl et al., 2022; W. Zhang et al., 2022).

To determine the panel data regression model, test which model is best. The selection of the model is carried out using the Chow test, Hausman test, and Lagrange multiplier (L.M.) test, where the three tests choose which one is the best among the common effect model, fixed effect model, or random effect model to use(Alghifari et al., 2022; Herawati & Angger, 2018; Tanjung et al., 2021)

The instruments used in processing panel data use R and R studio software. R is a popular programming language and software environment for statistical analysis and data visualization. R can perform different types of data analysis, from descriptive statistics to more complex modeling models(Bruel & Sabatier, 2020; Carracedo et al., 2021; Chao et al., 2020). R Studio is an integrated development environment (IDE) specifically designed to work with R (Fumaneeshoat, 2019; Kleineidam, 2022; Muli et al., 2021). It provides a convenient interface for writing R scripts, running code, and managing data analysis projects.

4. RESULTS AND DISCUSSION

4.1. RESULTS

Table 1: Common effect model

Variables	Coefficients	Pr(>|t|)
Intercept	6571.57	0.42622
X1	-98.01	0.43396
X2	362.44	0.08884*
Adj. R-Squared: 0.040701		

Notes: *p< 0.1.

In Table 1, showing the output results of the common effect model, variable X2 has a p-value of 0.08884, which means that the coefficient is statistically significant at a confidence level of 90%. The variable X1 has a p-value of 0.43396, which indicates that the coefficient is not statistically significant at a 99% confidence level. R-squared 0.040701 indicates that the regression model can account for about 4.07% of the variation in the data.

Table 2: Fixed Effect Model

Variables	Coefficients	Pr(>|t|)
X1	-249.68	0.2083
X2	384.53	0.0554*
West Java	17,726	
East Java	20,408	
North Sumatra	16,887	
East Kalimantan	16,686	
South Sulawesi	16,495	
West Sulawesi	15,296	
Adj. R-Squared: 0.097891		

Notes: *p< 0.1.

Table 2 shows the output of the Fixed effect model. Variable X2 has a p-value of 0.0554, which means that the coefficient is statistically significant at a confidence level of 90%. The variable X1 has a p-value of 0.2083, which indicates that the coefficient is not statistically significant at a 90% confidence level. An R-squared value of 0.097891 indicates that the regression model can account for about 9.79% of the variation in the data.

Table 3: Random Effect Model

Variables	Coefficients	Pr(>|t|)
Intercept	14157.74	0.20064
X1	-206.02	0.19855
X2	381.29	0.03015**
West Java	458.2927	
East Java	3098.4576	
North Sumatra	-364.9538	
East Kalimantan	-760.5260	
South Sulawesi	-749.4468	
West Sulawesi	-1681.8237	
Adj. R-Squared: 0.090286		

Notes:* *p< 0.05

In Table 3, showing the Random Effect model output results, variable X2 has a p-value of 0.03015, which means that the coefficient is statistically significant at a confidence level of 95%. The variable X1 has a p-value of 0.19855, indicating that the coefficient is not statistically significant at the 95% confidence level. An R-squared value of 0.090286 indicates that the regression model was able to explain about 9.03% of the variation in the data.

Table 4: Chow Test

	Value	Pr(>|t|)
F	34.25	0.001**

Notes: **p< 0.05

Table 4 shows the p-value of 0.001 less than the specified level of significance, the null hypothesis is rejected, and it can be concluded that there is a significant difference between the two regression models, meaning that there is a significant difference between the two groups of data in influencing the dependent variable (in this test the fixed effect model is better)

Table 5: Hausman Test

	Value	Pr(>|t|)
Chi square	0.17271	0.9173

Table 5 shows a p-value of 0.9173, more than the specified significance level (e.g., 0.05). Then, the null hypothesis is accepted, and it can be concluded that the fixed effect model is better.

Table 6: Normality Test

	Value	Pr(>|t|)
BP	2.4565	0.2928

Table 6 shows that one way to perform a normality test on panel data regression in R is to use the Jarque-Bera test. The Jarque-Bera test can be performed using the "bptest" function of the "lmtest" package in R (Zhou et al., 2022). The results of the B.P. test show the value of p-value = 0.2928, so it can be concluded that the residual in the panel data regression model is normally distributed

Table 7: Heteroskedasticity Test

	Value	Pr(>|t|)
BP	2.8583	0.2395

Table 7 shows that One way to test heteroscedasticity in regression panel data in R is to use the Breusch-Pagan test (Ambya & Hamzah, 2022). The Breusch-Pagan test can be performed using the "bptest" function of R's "lmtest" package. The conclusion of the B.P. test results shows the value of p-value = 0.2395, and it can be concluded that the residual in the panel data regression model There is no heteroscedasticity.

Table 8. Multicollinearity Test

	X1	X2
X1	1.000000	0.132811
X2	0.132811	1.000000

Table 8 shows the results of the multicollinearity test using R. Multicollinearity tests are usually carried out using the Variance Inflation Factor (VIF) value (Gholami et al., 2020). The tested model has a VIF value of > 10.00, so the selected regression model has a multicollinearity problem. Based on Table 8, no number exceeds 10.00, so it can be interpreted that this model is free from multicollinearity problems.

Table 9: Autokorelasi Test

	Value	Pr(>|t|)
BP	15.071	0.000

Autocorrelation tests or tests for the existence of residual linkages in panel data regression can be performed using the Breusch-Godfrey/L.M. test (Lagrange Multiplier) or Durbin-Watson test (B. Huseynli, 2022; N. Huseynli, 2022). Conclusion The results of the Breusch-Godfrey test show the value of p-value = 0.0001036. It can be concluded that the residual in the panel data regression model has Autocorrelation. Because there is Autocorrelation in the panel data regression model (Fixed Effect), model improvements will be made. The "pggls" function generates new model estimates that have been adjusted using the FGLS method to overcome Autocorrelation in panel data.

Table 10: Fixed Effect Model (FGLS)

Variables	Coefficients	Pr(>|t|)
X1	-95.482	0.1588
X2	384.53	0.0006**
West Java	7362	
East Java	9780	
North Sumatra	6331	
East Kalimantan	5460.5	
South Sulawesi	5911.3	

West Sulawesi	5438.4
Adj. R-Squared: 0.89543	

Notes: **p< 0.05

Table 8 shows the Fixed Effect Model output with model adjustments or improvements. The results show that X2 has a p-value of 0.0006, meaning the coefficient is statistically significant at a 95% confidence level. In comparison, the variable X1 has a p-value of 0.1588, which shows that the coefficient is not statistically significant at the 95% confidence level. The R-squared value of 0.89543 shows that the regression model can explain about 89.54% of the variation in data. Compared to the previous model in Table 2, this model is better with an increased R-squared value and has been free from autocorrelation problems.

4.2. DISCUSSION

4.2.1. HDI and Poverty

Based on the results of the study showed that the human development index has a negative relationship with poverty but is not significant. This finding shows something different from previous studies that showed negative and significant associations (Allou et al., 2020; Azam et al., 2021; Davies et al., 2020; Imeokparia et al., 2023; Skevington et al., 2019). Some of the causes of research results are different from others, namely;

1. Regional ability: Each region or country has unique social, economic, and demographic characteristics(Y. Chen et al., 2023; Parapid et al., 2021; Wu et al., 2021; Zemtsov et al., 2022; Y. Zhang et al., 2023). This variability can affect the relationship between HDI and poverty. Poverty rates and HDI levels differ significantly between countries or regions.

2. Social and Cultural Change: Social and cultural aspects can be essential in determining poverty (Haider et al., 2020; Leuenberger et al., 2021; Rodrigues et al., 2020; Teixeira et al., 2021). Changes in social norms or cultural values can affect responses to development efforts and the impact of HDI.

3. Changes in Economic Structure: Changes in the economic structure of a country or region may affect the relationship between HDI and poverty levels(Grömling et al., 2023; Jeong et al., 2023; Lisaba & Lopez, 2021). For example, rapid economic growth may not always be followed by an increase in the equitable distribution of income

4. Historical and Structural Context: Each country or region has a unique historical and structural context, which can affect the relationship between HDI and poverty(Osborne et al., 2021; Scott et al., 2021). Historical factors such as conflict, colonialism, or structural inequality can shape different socio-economic conditions and influence the impact of HDI on poverty levels.

5. Ecological and Environmental Balance: Environmental and sustainability factors can also be necessary to link HDI and poverty(Kumar et al., 2019; Raja & Kumar, 2023; Yang et al., 2017). Considerations for ecology, resource sustainability, and environmental impact on specific community groups may not be fully reflected in HDI.

6. Adaptation to Global Change: In the era of globalization, economic and social changes that occur at the global level can affect the relationship between HDI and poverty (Barraclough et al., 2021; Brennan, DeMayo, Dam, Finiguerra, Baumann, & Pespeni, 2022; Brennan, DeMayo, Dam, Finiguerra, Baumann, Buffalo, et al., 2022; Vadell et al., 2022). Countries or regions that are more flexible and able to adapt to global changes may experience a more significant positive impact of HDI on poverty.

7. The Role of Government and Economic Policy: The effectiveness of government policies in managing resources, supporting education, and providing health services can also play an essential role in overcoming poverty (Awan et al., 2022; Garza-Juárez et al.,

2023; Johnson & Eccleston, 2023; Parolin, 2021). If economic policies are inappropriate or inadequate, the positive influence of HDI may not be well reflected in reducing poverty rates.

Although the association between HDI and poverty is not statistically significant, it is essential to consider the relationship's direction and the effect's size. If the results show a negative relationship between HDI and poverty, although not significant, it may provide clues that increasing HDI can potentially reduce poverty rates on a broader scale or in different contexts.

4.2.2. Unemployment and Poverty

The study results show a positive and significant relationship between unemployment and poverty. This indicates that if the unemployment rate increases, it will increase the poverty rate in Indonesia. The results of this finding are the same as previous studies conducted by (Lieberman-Cribbin et al., 2020; McWhirter & McWha-Hermann, 2021; Miao et al., 2021; Naz, 2023; Nguse & Wassenaar, 2021; South et al., 2021). Meningkatkan pendapatan melalui pekerjaan dapat mengurangi kemiskinan (Amponsah et al., 2023; Rahmanto et al., 2020).Increasing income through employment can reduce poverty

There is a close relationship between unemployment and poverty. Unemployment can be one factor causing a society's increasing poverty rate. Here are some explanations about the relationship between unemployment and poverty:

1. Limited income: Unemployment causes a loss of source of income for the affected individual or family. Without a stable income, it is difficult for them to meet basic needs such as food, clothing, housing, education, and access to healthcare (Mutambara & Naidu, 2023; Phuti et al., 2019; Rahmanto et al., 2020; Schuler et al., 2022; Sunge & Mudzingiri, 2023) This can lead to poverty or worsen existing poverty conditions.

2. Lack of economic security: When a person loses his job, they also loses the guarantee of economic security; they may not have enough savings to survive for long periods without a steady income(Brook et al., 2018; Cerbara et al., 2020; Gupta, 2020). As a result, they can be plunged into poverty if they do not immediately get a new job.

3. Cycle of poverty: Unemployment can lead to a cycle of poverty that is difficult to break. When someone loses their job, they may struggle to get a new job due to skill limitations, lack of experience, or lack of available job opportunities (Amjath-Babu et al., 2019; Eastwood et al., 2019; Mahon, 2019; Millien et al., 2021; Mutambara & Naidu, 2023). This can cause them to be trapped in long-term poverty and find it difficult to get out of the cycle of poverty.

4. Social and psychological impact: Unemployment can also hurt the social and psychological aspects of a person (Al Gharaibeh, 2020; Breetzke & Wild, 2022; Htay et al., 2021; Mezzana et al., 2022; Richardson et al., 2022). Feelings of hopelessness, loss of self-esteem, and feelings of uselessness often arise when a person experiences prolonged unemployment. This can affect mental well-being and overall quality of life.

5. Effect on economic growth: A high unemployment rate can lead to a slowdown in the economic growth of a country or region. When most of the labor force is unemployed, people's consumption and economic productivity decline. This can create a vicious cycle where low economic growth leads to more unemployment, which in turn hinders further economic growth(Alkhawaldeh et al., 2020; Lawanson & Umar, 2019; Sebunya Gertrude, 2021; Sibai et al., 2003; Sugiyanto & Yolanda, 2020).

In order to reduce poverty, it is essential to address the problem of unemployment by creating more job opportunities, improving the labor force's skills, and implementing economic policies that promote growth and development. In addition, social protection

programs and social assistance aimed at unemployment-affected communities can also help reduce poverty among them.

5. CONCLUSION

Based on the discussion results, it can be concluded that the Human Development Index has a negative and insignificant effect on the increase in poverty in Indonesia. Conversely, unemployment positively and significantly affects increasing poverty in Indonesia. This research contributes to the government improving workforce skills and preparing employment through foreign and domestic investment policies. The investment will provide a multiplier effect on increasing people's income to improve the quality of life, reducing the level or number of poor people in Indonesia. Governments can address poverty through the variable Human Development Index (HDI) through policies that include investing in quality and affordable education, strengthening health systems with broader access, promoting economic growth and job creation, implementing social protection programs, and investing in basic infrastructure. A holistic and integrated approach, with active community participation, can help increase HDI and reduce poverty effectively.

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References

Abdul-Halim, N.-A., Vafaei-Zadeh, A., Hanifah, H., Teoh, A. P., & Nawaser, K. (2022). Understanding the determinants of e-wallet continuance usage intention in Malaysia. Quality & Quantity, 56(5), 3413–3439. https://doi.org/10.1007/s11135-021-01276-7

Abdullahi, Y., & Kehinde, A. O. (2023). Drivers, Enablers, Barriers and Technologies (DEBT) For Low-Energy Public Housing Delivery in Nigeria. Journal of Advanced Research in Applied Sciences and Engineering Technology, 29(3), 115–127. https://doi.org/10.37934/araset.29.3.115127

Al Gharaibeh, F. (2020). The response of Jordanian society and social workers to the COVID-19 crisis. International Social Work, 63(6), 811–814. https://doi.org/10.1177/0020872820944989

Alghifari, E. S., Gunardi, A., Suteja, J., Nisa, I. K., & Amarananda, Z. (2022). Investment Decisions of Energy Sector Companies on the Indonesia Stock Exchange: Theory and Evidence. International Journal of Energy Economics and Policy, 12(6), 73–79. https://doi.org/10.32479/ijeep.13642

Alkhawaldeh, B. Y., Mahmood, S., & Jakada, A. H. (2020). An Empirical Assessment of the Effect of Taxes and Interest Rate on Economic Growth in Jordan: An Application of Dynamic

Autoregressive-Distributed Lag. Research in World Economy, 11(3), 92. https://doi.org/10.5430/rwe.v11n3p92

Allou, E. J., Adeleye, B. N., Cheng, J., & Abdul, R. (2020). Is there a nexus between China outward foreign direct investment and welfare in Côte d'Ivoire? Empirical evidence from the Toda–Yamamoto procedure. African Development Review, 32(3), 499–510. https://doi.org/10.1111/1467-8268.12456

Amadu, I., Ahinkorah, B. O., Afitiri, A.-R., Seidu, A.-A., Ameyaw, E. K., Hagan, J. E., Duku, E., & Aram, S. A. (2021). Assessing sub-regional-specific strengths of healthcare systems associated with COVID-19 prevalence, deaths, and recoveries in Africa. PLOS ONE, 16(3), e0247274. https://doi.org/10.1371/journal.pone.0247274

Ambya, A., & Hamzah, L. M. (2022). Indonesian Coal Exports: Dynamic Panel Analysis Approach. International Journal of Energy Economics and Policy, 12(1), 390–395. https://doi.org/10.32479/ijeep.11978

Amini, M., Zayeri, F., & Salehi, M. (2021). Trend analysis of cardiovascular disease mortality, incidence, and mortality-to-incidence ratio: results from global burden of disease study 2017. BMC Public Health, 21(1), 401. https://doi.org/10.1186/s12889-021-10429-0

Amjath-Babu, T. S., Sharma, B., Brouwer, R., Rasul, G., Wahid, S. M., Neupane, N., Bhattarai, U., & Sieber, S. (2019). Integrated modelling of the impacts of hydropower projects on the water-food-energy nexus in a transboundary Himalayan river basin. Applied Energy, 239(January), 494–503. https://doi.org/10.1016/j.apenergy.2019.01.147

Amorós, J. E., Ramírez, L. M., Rodríguez-Aceves, L., Ruiz, L. E., Arshed, N., Rauf, R., Bukhari, S., Hunter, L., Lean, J., Dencker, J. C., Bacq, S., Alvarez-Sousa, A., Puente, R., González Espitia, C. G., Cervilla, M. A., Rodrigues, D., Teixeira, A. A. C., Stoica, O., Roman, A., & Rusu, V. D. (2019). RECONCEPTUALIZING NECESSITY ENTREPRENEURSHIP : A CONTEXTUALIZED FRAMEWORK OF ENTREPRENEURIAL Academy of Management Review RECONCEPTUALIZING NECESSITY ENTREPRENEURSHIP : A CONTEXTUALIZED FRAMEWORK OF ENTREPRENEURIAL PROCESSES UNDER THE CONDITION OF BASIC N. Journal of Developmental Entrepreneurship, 25(4), 3–24. https://doi.org/10.1080/08985626.2019.1650294%0Ahttps://www.scopus.com/inward/record.uri?eid=2-s2.0-85044088194&doi=10.1108%2FJSBED-02-2017-0075&partnerID=40&md5=c6b8b6d9a438f11ac209adf20630d0ab

Amponsah, M., Agbola, F. W., & Mahmood, A. (2023). The relationship between poverty, income inequality and inclusive growth in Sub-Saharan Africa. Economic Modelling, 126(June), 106415. https://doi.org/10.1016/j.econmod.2023.106415

Andrade, C. (2021). The Inconvenient Truth About Convenience and Purposive Samples. Indian Journal of Psychological Medicine, 43(1), 86–88. https://doi.org/10.1177/0253717620977000

Antipova, A. (2021). Analysis of the COVID-19 impacts on employment and unemployment across the multi-dimensional social disadvantaged areas. Social Sciences & Humanities Open, 4(1), 100224. https://doi.org/10.1016/j.ssaho.2021.100224

Asadullah, M. N., Bouhlila, D. S., Chan, S. J., Draxler, A., Ha, W., Heyneman, S. P., Luschei, T. F., Semela, T., & Yemini, M. (2023). A year of missed opportunity: Post-Covid learning loss – A renewed call to action. International Journal of Educational Development, 99(March), 10–12. https://doi.org/10.1016/j.ijedudev.2023.102770

Aubert, S., Barnes, J. D., Demchenko, I., Hawthorne, M., Abdeta, C., Nader, P. A., Sala, J. C. A., Aguilar-Farias, N., Aznar, S., Bakalár, P., Bhawra, J., Brazo-Sayavera, J., Bringas, M., Cagas, J. Y., Carlin, A., Chang, C. K., Chen, B., Christiansen, L. B., Christie, C. J. A., … Tremblay, M. S. (2022). Global Matrix 4.0 Physical Activity Report Card Grades for Children and Adolescents: Results and Analyses From 57 Countries. Journal of Physical Activity and Health, 19(11), 700–728. https://doi.org/10.1123/jpah.2022-0456

Awan, A., Bilgili, F., & Rahut, D. B. (2022). Energy poverty trends and determinants in Pakistan: Empirical evidence from eight waves of HIES 1998–2019. Renewable and Sustainable Energy Reviews, 158, 112157. https://doi.org/10.1016/j.rser.2022.112157

Azam, A., Rafiq, M., Shafique, M., & Yuan, J. (2023). Interpreting the Dynamic Nexus between Green Energy, Employment, Fossil Fuel Energy, and Human Development Index: A Panel Data Investigation. Energies, 16(7), 3132. https://doi.org/10.3390/en16073132

Azam, A., Rafiq, M., Shafique, M., Yuan, J., & Salem, S. (2021). Human Development Index, ICT, and Renewable Energy-Growth Nexus for Sustainable Development: A Novel PVAR Analysis. Frontiers in Energy Research, 9(November), 1–11. https://doi.org/10.3389/fenrg.2021.760758

Barraclough, A. D., Schultz, L., & Måren, I. E. (2021). Voices of young biosphere stewards on the strengths, weaknesses, and ways forward for 74 UNESCO Biosphere Reserves across 83 countries. Global Environmental Change, 68(March), 102273. https://doi.org/10.1016/j.gloenvcha.2021.102273

Breetzke, J., & Wild, E.-M. (2022). Social connections at work and mental health during the first wave of the COVID-19 pandemic: Evidence from employees in Germany. PLOS ONE, 17(6), e0264602. https://doi.org/10.1371/journal.pone.0264602

Brennan, R. S., DeMayo, J. A., Dam, H. G., Finiguerra, M. B., Baumann, H., & Pespeni, M. H. (2022). Loss of transcriptional plasticity but sustained adaptive capacity after adaptation to global change conditions in a marine copepod. Nature Communications, 13(1), 1147. https://doi.org/10.1038/s41467-022-28742-6

Brennan, R. S., DeMayo, J. A., Dam, H. G., Finiguerra, M., Baumann, H., Buffalo, V., & Pespeni, M. H. (2022). Experimental evolution reveals the synergistic genomic mechanisms of adaptation to ocean warming and acidification in a marine copepod. Proceedings of the National Academy of Sciences, 119(38), 1–10. https://doi.org/10.1073/pnas.2201521119

Brook, O., O'Brien, D., & Taylor, M. (2018). Panic! Social Class, Taste and Inequalities in the Creative Industries - Create London. https://createlondon.org/event/panic-paper/

Bruel, R., & Sabatier, P. (2020). serac: an R package for ShortlivEd RAdionuclide chronology of recent sediment cores. Journal of Environmental Radioactivity, 225(January), 106449. https://doi.org/10.1016/j.jenvrad.2020.106449

Bukari, C., Essilfie, G., Aning-Agyei, M. A., Otoo, I. C., Kyeremeh, C., Owusu, A. A., Amuquandoh, K. F., & Bukari, K. I. (2021). Impact of COVID-19 on poverty and living standards in Ghana: A micro-perspective. Cogent Economics & Finance, 9(1). https://doi.org/10.1080/23322039.2021.1879716

Carracedo, P., Puertas, R., & Marti, L. (2021). Research lines on the impact of the COVID-19 pandemic on business. A text mining analysis. Journal of Business Research, 132(November 2020), 586–593. https://doi.org/10.1016/j.jbusres.2020.11.043

Cerbara, L., Ciancimino, G., Crescimbene, M., La Longa, F., Parsi, M. R., Tintori, A., & Palomba, R. (2020). A nation-wide survey on emotional and psychological impacts of COVID-19 social distancing. European Review for Medical and Pharmacological Sciences, 24(12), 7155–7163. https://doi.org/10.26355/eurrev_202006_21711

Chao, G., Zhu, Y., & Fang, L. (2020). Correlation Between Hashimoto's Thyroiditis–Related Thyroid Hormone Levels and 25-Hydroxyvitamin D. Frontiers in Endocrinology, 11(February), 1–7. https://doi.org/10.3389/fendo.2020.00004

Chen, X., You, X., & Chang, V. (2021). FinTech and commercial banks' performance in China: A leap forward or survival of the fittest? Technological Forecasting and Social Change, 166(January), 120645. https://doi.org/10.1016/j.techfore.2021.120645

Chen, Y., Liu, C., Li, H., & Xue, X. (2023). How do countries along the Maritime Silk Road perform in sustainable use of natural resources? Progress of natural resources-related SDGs. Ecological Indicators, 149(April), 110194. https://doi.org/10.1016/j.ecolind.2023.110194

Chien, F. (2023). The Impact of Green Investment, Eco-Innovation, and Financial Inclusion on Sustainable Development: Evidence from China. Engineering Economics, 34(1), 17–31. https://doi.org/10.5755/j01.ee.34.1.32159

Chu, W., Liu, H., & Fang, F. (2021). A tale of three excellent chinese efl teachers: Unpacking teacher professional qualities for their sustainable career trajectories from an ecological perspective. Sustainability (Switzerland), 13(12). https://doi.org/10.3390/su13126721

Czech, K., Davy, A., & Wielechowski, M. (2021). Does the COVID-19 Pandemic Change Human Mobility Equally Worldwide? Cross-Country Cluster Analysis. Economies, 9(4), 182. https://doi.org/10.3390/economies9040182

Das, R., Hasan, M. R., Daria, S., & Islam, M. R. (2021). Impact of COVID-19 pandemic on mental health among general Bangladeshi population: a cross-sectional study. BMJ Open, 11(4), e045727. https://doi.org/10.1136/bmjopen-2020-045727

Davies, J. I., Reddiar, S. K., Hirschhorn, L. R., Ebert, C., Marcus, M.-E., Seiglie, J. A., Zhumadilov, Z., Supiyev, A., Sturua, L., Silver, B. K., Sibai, A. M., Quesnel-Crooks, S., Norov, B., Mwangi, J. K., Omar, O. M., Wong-McClure, R., Mayige, M. T., Martins, J. S., Lunet, N., … Jaacks, L. M. (2020). Association between country preparedness indicators and quality clinical care for cardiovascular disease risk factors in 44 lower- and middle-income countries: A multicountry analysis of survey data. PLOS Medicine, 17(11), e1003268. https://doi.org/10.1371/journal.pmed.1003268

de Bruijn, E.-J., & Antonides, G. (2022). Poverty and economic decision making: a review of scarcity theory. Theory and Decision, 92(1), 5–37. https://doi.org/10.1007/s11238-021-09802-7

Del Río-Gamero, B., Santiago, D. E., Schallenberg-Rodríguez, J., & Melián-Martel, N. (2022). Does the Use of Videos in Flipped Classrooms in Engineering Labs Improve Student Performance? Education Sciences, 12(11). https://doi.org/10.3390/educsci12110735

Dörffel, C., & Schuhmann, S. (2022). What is Inclusive Development? Introducing the Multidimensional Inclusiveness Index. Social Indicators Research, 162(3), 1117–1148. https://doi.org/10.1007/s11205-021-02860-y

Drescher, K., & Janzen, B. (2021). Determinants, persistence, and dynamics of energy poverty: An empirical assessment using German household survey data. Energy Economics, 102(June), 105433. https://doi.org/10.1016/j.eneco.2021.105433

Eastwood, J. G., De Souza, D. E., Shaw, M., Garg, P., Woolfenden, S., Tyler, I., & Kemp, L. A. (2019). Designing Initiatives for Vulnerable Families: From Theory to Design in Sydney, Australia. International Journal of Integrated Care, 19(3), 1–13. https://doi.org/10.5334/ijic.3963

Elia, C., Karamanos, A., Dregan, A., O'Keeffe, M., Wolfe, I., Sandall, J., Morgan, C., Cruickshank, J. K., Gobin, R., Wilks, R., & Harding, S. (2020). Association of macro-level determinants with adolescent overweight and suicidal ideation with planning: A cross-sectional study of 21 Latin American and Caribbean Countries. PLOS Medicine, 17(12), e1003443. https://doi.org/10.1371/journal.pmed.1003443

Etminani-Ghasrodashti, R., Ketankumar Patel, R., Kermanshachi, S., Michael Rosenberger, J., Weinreich, D., & Foss, A. (2021). Integration of shared autonomous vehicles (SAVs) into existing transportation services: A focus group study. Transportation Research Interdisciplinary Perspectives, 12(April), 100481. https://doi.org/10.1016/j.trip.2021.100481

Fumaneeshoat, O. (2019). Prevalence of Atypical Disorders and Associated Factors in Undergraduate Students of Prince of Songkla University, Songkhla, Thailand. Journal of Health Science and Medical Research, 37(2), 121–131. https://doi.org/10.31584/jhsmr.201947

García-Tizón Larroca, S., Amor Valera, F., Ayuso Herrera, E., Cueto Hernandez, I., Cuñarro Lopez, Y., & De Leon-Luis, J. (2020). Human Development Index of the maternal country of origin and its relationship with maternal near miss: A systematic review of the literature. BMC Pregnancy and Childbirth, 20(1), 224. https://doi.org/10.1186/s12884-020-02901-3

Garza-Juárez, A., Pérez-Carrillo, E., Arredondo-Espinoza, E. U., Islas, J. F., Benítez-Chao, D. F., & Escamilla-García, E. (2023). Nutraceuticals and Their Contribution to Preventing Noncommunicable Diseases. Foods, 12(17), 3262. https://doi.org/10.3390/foods12173262

GEORGE-EDUARD, G., RADU-CRISTIAN, M., SIMONA, N., & OANA, V. (2022). A Panel Data Analysis in Estimating the Economic Growth for Oil-Producing Countries. Evidence from the Caspian Region. ECONOMIC COMPUTATION AND ECONOMIC CYBERNETICS STUDIES AND RESEARCH, 56(4/2022), 225–242. https://doi.org/10.24818/18423264/56.4.22.14

Gholami, H., Mohamadifar, A., & Collins, A. L. (2020). Spatial mapping of the provenance of storm dust: Application of data mining and ensemble modelling. Atmospheric Research, 233(October 2019), 104716. https://doi.org/10.1016/j.atmosres.2019.104716

Grömling, M., Koenen, M., Kunath, G., Obst, T., & Parthie, S. (2023). Deindustrialisation – A European Assessment. Intereconomics, 58(4), 209–214. https://doi.org/10.2478/ie-2023-0043

Gupta, D. (2020). Think "Big": Strategizing Post-coronial Revival in India. The Indian Journal of Labour Economics, 63(S1), 145–150. https://doi.org/10.1007/s41027-020-00270-1

Ha, V. D. (2020). Reciprocity Between Productivity and Credit Growth in Vietnam's Co-operatives Credit Institutions. Research in World Economy, 11(1), 93. https://doi.org/10.5430/rwe.v11n1p93

Haider, L. J., Boonstra, W. J., Akobirshoeva, A., & Schlüter, M. (2020). Effects of development interventions on biocultural diversity: a case study from the Pamir Mountains. Agriculture and Human Values, 37(3), 683–697. https://doi.org/10.1007/s10460-019-10005-8

Halkos, G. E., & Aslanidis, P.-S. C. (2023). Causes and Measures of Poverty, Inequality, and Social Exclusion: A Review. Economies, 11(4), 110. https://doi.org/10.3390/economies11040110

Hancock, C. L. (2023). Ideologies of poverty and implications for decision-making with families during home visits. Linguistics and Education, 78(September), 101231. https://doi.org/10.1016/j.linged.2023.101231

Harahap, I. M., Septiani, I., & Endri, E. (2020). Effect of financial performance on firms' value of cable companies in Indonesia. Accounting, 6(6), 1103–1110. https://doi.org/10.5267/j.ac.2020.7.008

Hardinghaus, M., Nieland, S., Lehne, M., & Weschke, J. (2021). More than Bike Lanes—A Multifactorial Index of Urban Bikeability. Sustainability, 13(21), 11584. https://doi.org/10.3390/su132111584

Herawati, A., & Angger. (2018). The Influence of Fundamental Analysis on Stock Prices: The Case of Food and Beverage Industries. EUROPEAN RESEARCH STUDIES JOURNAL, XXI(Issue 3), 316–326. https://doi.org/10.35808/ersj/1063

Hernández-Vásquez, A., Olazo-Cardenas, K. M., Visconti-Lopez, F. J., & Barrenechea-Pulache, A. (2022). What Drives Abdominal Obesity in Peru? A Multilevel Analysis Approach Using a Nationally Representative Survey. International Journal of Environmental Research and Public Health, 19(16), 10333. https://doi.org/10.3390/ijerph191610333

Htay, M. N. N., Marzo, R. R., Bahari, R., AlRifai, A., Kamberi, F., El-Abasiri, R. A., Nyamache, J. M., Hlaing, H. A., Hassanein, M., Moe, S., Abas, A. L., & Su, T. T. (2021). How healthcare workers are coping with mental health challenges during COVID-19 pandemic? - A cross-sectional multi-countries study. Clinical Epidemiology and Global Health, 11(February), 100759. https://doi.org/10.1016/j.cegh.2021.100759

Huseynli, B. (2022). Examining the Relationship Between Brand Value, Energy Production and Economic Growth. International Journal of Energy Economics and Policy, 12(3), 298–304. https://doi.org/10.32479/ijeep.12987

Huseynli, N. (2022). Effect of Renewable Energy and Traditional Energy Production on Economic Growth: The Case of Turkey and Azerbaijan. International Journal of Energy Economics and Policy, 12(3), 257–261. https://doi.org/10.32479/ijeep.12943

Imeokparia, L., Peter, O. O., Bello, B. A., Osabohien, R., Aderemi, T. A., Gershon, O., Aaron, D., & Abidemi, A. (2023). A Panel Analysis of Crude Oil Exports and Poverty Reduction in African Oil Producing Countries: Implication for the Sustainable Development Goal One. International Journal of Energy Economics and Policy, 13(4), 169–174. https://doi.org/10.32479/ijeep.14579

Inoue, K., Seeman, T. E., Nianogo, R., & Okubo, Y. (2023). The effect of poverty on the relationship between household education levels and obesity in U.S. children and adolescents: an observational study. The Lancet Regional Health - Americas, 25, 100565. https://doi.org/10.1016/j.lana.2023.100565

Jeong, H., Yim, H. W., Lee, S.-Y., & Jung, D. Y. (2023). Impact of the COVID-19 Pandemic on Gender Differences in Depression Based on National Representative Data. Journal of Korean Medical Science, 38(6), 1–11. https://doi.org/10.3346/jkms.2023.38.e36

Jiang, H., Islam, A. Y. M. A., Gu, X., & Spector, J. M. (2021). Online learning satisfaction in higher education during the COVID-19 pandemic: A regional comparison between Eastern and Western Chinese universities. Education and Information Technologies, 26(6), 6747–6769. https://doi.org/10.1007/s10639-021-10519-x

Johnson, L., & Eccleston, R. (2023). Interrogating inclusive growth: Implications for conceptualisation, measurement and policy practice. Australian Economic Papers, 62(2), 362–376. https://doi.org/10.1111/1467-8454.12294

Jutte, D. P., Badruzzaman, R. A., & Thomas-Squance, R. (2021). Neighborhood Poverty and Child Health: Investing in Communities to Improve Childhood Opportunity and Well-Being. Academic Pediatrics, 21(8), S184–S193. https://doi.org/10.1016/j.acap.2021.04.027

Karakose, T., Polat, H., & Papadakis, S. (2021). Examining Teachers' Perspectives on School Principals' Digital Leadership Roles and Technology Capabilities during the COVID-19 Pandemic. Sustainability, 13(23), 13448. https://doi.org/10.3390/su132313448

Kleineidam, J. (2022). Distinguishing Organisational Profiles of Food Loss Management in Logistics. Logistics, 6(3), 61. https://doi.org/10.3390/logistics6030061

Köttl, H., Gallistl, V., Rohner, R., & Ayalon, L. (2021). "But at the age of 85? Forget it!": Internalized ageism, a barrier to technology use. Journal of Aging Studies, 59(September), 100971. https://doi.org/10.1016/j.jaging.2021.100971

Kumar-M, P., Mishra, S., Jha, D. K., Shukla, J., Choudhury, A., Mohindra, R., Mandavdhare, H. S., Dutta, U., & Sharma, V. (2020). Coronavirus disease (COVID-19) and the liver: a comprehensive systematic review and meta-analysis. Hepatology International, 14(5), 711–722. https://doi.org/10.1007/s12072-020-10071-9

Kumar, A., Ibrahim, Y., Atta, B., Singh, V., Musa Elmubarak, O., Razak, C. A., Tripathi, B., & Vidyasagar, V. (2019, April 8). A Case Study on Treating Oil Contaminants and Heavy Metal of Produced Water Through Phytoremediation Using Reed Bed Technology: A Success Story of 15 Years Operation of Heglig Oil Field of Sudan. Day 2 Wed, April 10, 2019. https://doi.org/10.2118/194575-MS

Lacey, R. E., Howe, L. D., Kelly-Irving, M., Bartley, M., & Kelly, Y. (2022). The Clustering of Adverse Childhood Experiences in the Avon Longitudinal Study of Parents and Children: Are Gender and Poverty Important? Journal of Interpersonal Violence, 37(5–6), 2218–2241. https://doi.org/10.1177/0886260520935096

Lawanson, O. I., & Umar, D. I. (2019). Gender Inequality and its Implication for Inclusive Growth in Nigeria from 1980 to 2018. Asian Economic and Financial Review, 9(7), 789–806. https://doi.org/10.18488/journal.aefr.2019.97.789.806

Leuenberger, A., Kihwele, F., Lyatuu, I., Kengia, J. T., Farnham, A., Winkler, M. S., & Merten, S. (2021). Gendered health impacts of industrial gold mining in northwestern Tanzania: perceptions of local communities. Impact Assessment and Project Appraisal, 39(3), 183–195. https://doi.org/10.1080/14615517.2021.1904697

Lieberman-Cribbin, W., Tuminello, S., Flores, R. M., & Taioli, E. (2020). Disparities in COVID-19 Testing and Positivity in New York City. American Journal of Preventive Medicine, 59(3), 326–332. https://doi.org/10.1016/j.amepre.2020.06.005

Lisaba, E. B. F., & Lopez, N. S. A. (2021). Spatiotemporal Comparison of Drivers to CO2 Emissions in ASEAN: A Decomposition Study. Sustainability, 13(11), 6183. https://doi.org/10.3390/su13116183

Lucia, U., Fino, D., & Grisolia, G. (2022). A thermoeconomic indicator for the sustainable development with social considerations: A thermoeconomy for sustainable society. Environment, Development and Sustainability, 24(2), 2022–2036. https://doi.org/10.1007/s10668-021-01518-6

Ly, T. D., Dong, P. X., Anh, L. H., & Ha An, P. T. (2020). The Effect of International Trade on Food Security at Southeast Asian Countries. WSEAS TRANSACTIONS ON ENVIRONMENT AND DEVELOPMENT, 16(2014), 180–188. https://doi.org/10.37394/232015.2020.16.18

Mahon, R. (2019). Broadening the social investment agenda: The OECD, the World Bank and inclusive growth. Global Social Policy, 19(1–2), 121–138. https://doi.org/10.1177/1468018119826404

Marliati, M. (2020). Factors Influencing on Entrepreneurial Behavior of Street Vendors (A Case in Pekanbaru City, Riau Province). AGRARIS: Journal of Agribusiness and Rural Development Research, 6(2), 123–135. https://doi.org/10.18196/agr.6296

Maroko, A. R., Nash, D., & Pavilonis, B. T. (2020). COVID-19 and Inequity: a Comparative Spatial Analysis of New York City and Chicago Hot Spots. Journal of Urban Health, 97(4), 461–470. https://doi.org/10.1007/s11524-020-00468-0

Marton, T. A., Kis, A., Zubor-Nemes, A., Kern, A., & Fodor, N. (2020). Human Impact Promotes Sustainable Corn Production in Hungary. Sustainability, 12(17), 6784. https://doi.org/10.3390/su12176784

Maximova, S. G., Omelchenko, D. A., & Noyanzina, O. E. (2022). Human development, satisfaction with human capital and security in the Siberian and Far Eastern border regions. RUDN Journal of Sociology, 22(3), 646–660. https://doi.org/10.22363/2313-2272-2022-22-3-646-660

McWhirter, E. H., & McWha-Hermann, I. (2021). Social justice and career development: Progress, problems, and possibilities. Journal of Vocational Behavior, 126(April), 103492. https://doi.org/10.1016/j.jvb.2020.103492

Mezzana, P., Garibay, I., & Fusco, I. (2022). Vaginal Bipolar Radiofrequency Treatment of Mild SUI: A Pilot Retrospective Study. Medicina, 58(2), 181. https://doi.org/10.3390/medicina58020181

Miao, Q., Dunn, S., Wen, S. W., Lougheed, J., Reszel, J., Lavin Venegas, C., & Walker, M. (2021). Neighbourhood maternal socioeconomic status indicators and risk of congenital heart disease. BMC Pregnancy and Childbirth, 21(1), 72. https://doi.org/10.1186/s12884-020-03512-8

Milani, F. (2021). COVID-19 outbreak, social response, and early economic effects: a global VAR analysis of cross-country interdependencies. Journal of Population Economics, 34(1), 223–252. https://doi.org/10.1007/s00148-020-00792-4

Millien, C., Manzi, A., Katz, A. M., Gilbert, H., Smith Fawzi, M. C., Farmer, P. E., & Mukherjee, J. (2021). Assessing burden, risk factors, and perceived impact of uterine fibroids on women's lives in rural Haiti: implications for advancing a health equity agenda, a mixed methods study. International Journal for Equity in Health, 20(1), 1. https://doi.org/10.1186/s12939-020-01327-9

Minh, S. N., Hong, V. N. T., Hoang, L. Le, & Thuy, T. N. T. (2020). Does banking market power matter on financial stability? Management Science Letters, 10(2), 343–350. https://doi.org/10.5267/j.msl.2019.8.036

Moreno, C., Allam, Z., Chabaud, D., Gall, C., & Pratlong, F. (2021). Introducing the "15-Minute City": Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. Smart Cities, 4(1), 93–111. https://doi.org/10.3390/smartcities4010006

Muli, J. K., Neondo, J. O., Kamau, P. K., Odari, E., & Budambula, N. L. M. (2021). Phenomic characterization of Crotalaria germplasm for crop improvement. CABI Agriculture and Bioscience, 2(1), 1–15. https://doi.org/10.1186/s43170-021-00031-0

Mutambara, V. M., & Naidu, M. (2023). Negotiating In(security): Agency and Adaptation Among Zimbabwean Migrant Women Working in the Informal Sector in South Africa. Oriental Anthropologist, 23(1), 54–70. https://doi.org/10.1177/0972558X221147832

Nai Ruscone, M., & Fernández, D. (2021). Dynamics of HDI Index: Temporal Dependence Based on D-vine Copulas Model for Three-Way Data. Social Indicators Research, 158(2), 563–593. https://doi.org/10.1007/s11205-021-02682-y

Naz, A. (2023). Linkages between different types of globalization and socio-economic variables: panel data analysis for 129 countries. Journal of Economic Structures, 12(1), 7. https://doi.org/10.1186/s40008-023-00301-2

Nguse, S., & Wassenaar, D. (2021). Mental health and COVID-19 in South Africa. South African Journal of Psychology, 51(2), 304–313. https://doi.org/10.1177/00812463211001543

Odintsov, S. D., Oikonomou, V. K., & Fronimos, F. P. (2022). Quantitative predictions for <math altimg="si543.svg" display="inline" id="d1e1172"> <mrow> <mi>f</mi> <mrow> <mo>(</mo> <mi>R</mi> <mo>)</mo> </mrow> </mrow> </math> gravity primordial gravitational waves. Physics of the Dark Universe, 35, 100950. https://doi.org/10.1016/j.dark.2022.100950

Osborne, J., Paget, J., Giles-Vernick, T., Kutalek, R., Napier, D., Baliatsas, C., & Dückers, M. (2021). Community engagement and vulnerability in infectious diseases: A systematic review and qualitative analysis of the literature. Social Science & Medicine, 284(July), 114246. https://doi.org/10.1016/j.socscimed.2021.114246

Parapid, B., Kanjuh, V., Kostic, V., Polovina, S., Dinic, M., Loncar, Z., Lalic, K., Gojnic-Dugalic, M., Nedeljkovic, M., Lazic, B., Milosevic, M., Simic, D., Neskovic, A., Harrington, R., Valentine, M., Santos, V., Lewis, S., Djukic-Dejanovic, S., Mitchell, S., … Kass, W. (2021). Women's health in Serbia - past, present, and future. Srpski Arhiv Za Celokupno Lekarstvo, 149(11–12), 745–754. https://doi.org/10.2298/SARH211208105P

Parolin, Z. (2021). Temporary Assistance for Needy Families and the Black–White child poverty gap in the United States. Socio-Economic Review, 19(3), 1005–1035. https://doi.org/10.1093/ser/mwz025

Phuti, A., Schneider, M., Makan, K., Tikly, M., & Hodkinson, B. (2019). Living with systemic lupus erythematosus in South Africa: a bitter pill to swallow. Health and Quality of Life Outcomes, 17(1), 65. https://doi.org/10.1186/s12955-019-1132-y

Putri, N. K., Laksono, A. D., & Rohmah, N. (2023). Predictors of national health insurance membership among the poor with different education levels in Indonesia. BMC Public Health, 23(1), 1–8. https://doi.org/10.1186/s12889-023-15292-9

Rafique, G. M., Mahmood, K., Warraich, N. F., & Rehman, S. U. (2021). Readiness for Online Learning during COVID-19 pandemic: A survey of Pakistani LIS students. The Journal of Academic Librarianship, 47(3), 102346. https://doi.org/10.1016/j.acalib.2021.102346

Rahmanto, F., Purnomo, E. P., & Kasiwi, A. N. (2020). Food Diversification: Strengthening Strategic Efforts to Reduce Social Inequality through Sustainable Food Security Development in Indonesia. Caraka Tani: Journal of Sustainable Agriculture, 36(1), 33. https://doi.org/10.20961/carakatani.v36i1.41202

Rahmawati, F., Ananda, F. P., & Narmaditya, B. (2020). Socio-Economic Indicators and Income Inequality: Lesson from West Java in Indonesia. Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration, 28(3). https://doi.org/10.46585/sp28031114

Rai, S. S., Rai, S., & Singh, N. K. (2021). Organizational resilience and social-economic sustainability: COVID-19 perspective. Environment, Development and Sustainability, 23(8), 12006–12023. https://doi.org/10.1007/s10668-020-01154-6

Raja, R., & Kumar, S. (2023). Cupola slag as a green concrete-making material and its performance characteristics - A review. Renewable and Sustainable Energy Reviews, 185(August), 113573. https://doi.org/10.1016/j.rser.2023.113573

Ravaghi, H., Guisset, A. L., Elfeky, S., Nasir, N., Khani, S., Ahmadnezhad, E., & Abdi, Z. (2023). A scoping review of community health needs and assets assessment: concepts, rationale, tools and uses. BMC Health Services Research, 23(1), 1–20. https://doi.org/10.1186/s12913-022-08983-3

Reichelt, M., Makovi, K., & Sargsyan, A. (2021). The impact of COVID-19 on gender inequality in the labor market and gender-role attitudes. European Societies, 23(sup1), S228–S245. https://doi.org/10.1080/14616696.2020.1823010

Richardson, G. E., Gillespie, C. S., Mantle, O., Clynch, A., Ooi, S. Z. Y., Park, J. J., Bligh, E. R., Kundu, S., Georgiou, I., Bandyopadhyay, S., & Saunders, K. E. (2022). Social and psychological impact of the COVID-19 pandemic on U.K. medical and nursing students: protocol for a national medical and nursing student survey. BMJ Open, 12(5), e057467. https://doi.org/10.1136/bmjopen-2021-057467

Rocha, R., Atun, R., Massuda, A., Rache, B., Spinola, P., Nunes, L., Lago, M., & Castro, M. C. (2021). Effect of socioeconomic inequalities and vulnerabilities on health-system preparedness and response to COVID-19 in Brazil: a comprehensive analysis. The Lancet Global Health, 9(6), e782–e792. https://doi.org/10.1016/S2214-109X(21)00081-4

Rodrigues, L., Gillott, M., Waldron, J., Cameron, L., Tubelo, R., Shipman, R., Ebbs, N., & Bradshaw-Smith, C. (2020). User engagement in community energy schemes: A case study at the Trent Basin in Nottingham, UK. Sustainable Cities and Society, 61(May), 102187. https://doi.org/10.1016/j.scs.2020.102187

Sadath, A. C., & Acharya, R. H. (2021). Access to modern energy services and human development in India: Has government policies paid off? International Journal of Energy Economics and Policy, 11(3), 432–442. https://doi.org/10.32479/ijeep.10949

Salem, I. E., Elbaz, A. M., Elkhwesky, Z., & Ghazi, K. M. (2021). The COVID-19 pandemic: The mitigating role of government and hotel support of hotel employees in Egypt. Tourism Management, 85(January), 104305. https://doi.org/10.1016/j.tourman.2021.104305

Santillán, O. S., Cedano, K. G., & Martínez, M. (2020). Analysis of Energy Poverty in 7 Latin American Countries Using Multidimensional Energy Poverty Index. Energies, 13(7), 1608. https://doi.org/10.3390/en13071608

Sarkodie, S. A., & Adams, S. (2020). Electricity access, human development index, governance and income inequality in Sub-Saharan Africa. Energy Reports, 6, 455–466. https://doi.org/10.1016/j.egyr.2020.02.009

Schuler, B. R., Vazquez, C. E., & Hernandez, D. C. (2022). How Does Consistency of Food and Nutrition Support Effect Daily Food Consumption among Children Living in Poverty? Recession-Era Implications. Nutrients, 15(1), 29. https://doi.org/10.3390/nu15010029

Schwingshackl, L., Bröckelmann, N., Beyerbach, J., Werner, S. S., Zähringer, J., Schwarzer, G., & Meerpohl, J. J. (2022). An Empirical Evaluation of the Impact Scenario of Pooling Bodies of Evidence from Randomized Controlled Trials and Cohort Studies in Nutrition Research. Advances in Nutrition, 13(5), 1774–1786. https://doi.org/10.1093/advances/nmac042

Scott, J., Staines, Z., Higginson, A., Lauchs, M., Ryan, V., & Zhen, L. (2021). 'Walking in two worlds': A qualitative review of income management in Cape York. Australian Journal of Public Administration, 80(1), 46–63. https://doi.org/10.1111/1467-8500.12440

Sebunya Gertrude, M. (2021). Economic Growth and Financial Sector Development: Long-Run Structural Break Cointegration and Short-Run Equilibrium Relationships in the East African Community. International Journal of Applied Economics, Finance and Accounting, 9(2), 48–62. https://doi.org/10.33094/8.2017.2021.92.48.62

Sevillano-Monje, V., Martín-Gutiérrez, Á., & Hervás-Gómez, C. (2022). The Flipped Classroom and the Development of Competences: A Teaching Innovation Experience in Higher Education. Education Sciences, 12(4). https://doi.org/10.3390/educsci12040248

Shahid, I. A., Ullah, K., Khan, A. N., Ahmed, M. I., Dawood, M., Miller, C. A., & Khan, Z. A. (2021). Nexus between household energy and poverty in poorly documented developing economies—perspectives from pakistan. Sustainability (Switzerland), 13(19). https://doi.org/10.3390/su131910894

Shammi, M., Bodrud-Doza, M., Islam, A. R. M. T., & Rahman, M. M. (2021). Strategic assessment of COVID-19 pandemic in Bangladesh: comparative lockdown scenario analysis, public perception, and management for sustainability. Environment, Development and Sustainability, 23(4), 6148–6191. https://doi.org/10.1007/s10668-020-00867-y

Shammi, M., Bodrud-Doza, M., Towfiqul Islam, A. R. M., & Rahman, M. M. (2020). COVID-19 pandemic, socioeconomic crisis and human stress in resource-limited settings: A case from Bangladesh. Heliyon, 6(5), e04063. https://doi.org/10.1016/j.heliyon.2020.e04063

Sharma, M., Luthra, S., Joshi, S., & Kumar, A. (2022). Developing a framework for enhancing survivability of sustainable supply chains during and post-COVID-19 pandemic. International Journal of Logistics Research and Applications, 25(4–5), 433–453. https://doi.org/10.1080/13675567.2020.1810213

Sibai, B. M., Caritis, S., & Hauth, J. (2003). What we have learned about preeclampsia. Seminars in Perinatology, 27(3), 239–246. https://doi.org/10.1016/S0146-0005(03)00022-3

Silva, T. L., Maranhão, T. A., Sousa, G. J. B., da Silva, I. G., Lira Neto, J. C. G., & Araujo, G. A. D. S. (2022). Spatial Analysis of Suicide in Northeastern Brazil and Associated Social Factors. Texto e Contexto Enfermagem, 31, 1–15. https://doi.org/10.1590/1980-265X-TCE-2021-0096

Skevington, S. M., Emsley, R., Dehner, S., Walker, I., & Reynolds, S. E. (2019). Does Subjective Health Affect the Association between Biodiversity and Quality of Life? Insights from International Data. Applied Research in Quality of Life, 14(5), 1315–1331. https://doi.org/10.1007/s11482-018-9649-5

Sobral, M. F. F., Bezerra de Oliveira, B. R., Gomes da Penha Sobral, A. I., Monteiro Marinho, M. L., Duarte, G. B., & de Souza Melo, A. (2021). SARS-COV-2 Vaccines: What Indicators are Associated with the Worldwide Distribution of the First Doses. INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 58, 004695802110601. https://doi.org/10.1177/00469580211060184

South, E. C., MacDonald, J., & Reina, V. (2021). Association Between Structural Housing Repairs for Low-Income Homeowners and Neighborhood Crime. JAMA Network Open, 4(7), e2117067. https://doi.org/10.1001/jamanetworkopen.2021.17067

Sparrow, R., Dartanto, T., & Hartwig, R. (2020). Indonesia Under the New Normal: Challenges and the Way Ahead. Bulletin of Indonesian Economic Studies, 56(3), 269–299. https://doi.org/10.1080/00074918.2020.1854079

Sugiyanto, C., & Yolanda, Z. (2020). The Effect of Financial Deepening on Economic Growth, Inequality, and Poverty: Evidence from 73 Countries. South East European Journal of Economics and Business, 15(2), 15–27. https://doi.org/10.2478/jeb-2020-0012

Sunaryo, S., Santoni, A., Endri, E., & Harahap, M. N. (2020). Determinants of Capital Adequacy Ratio for Pension Funds: A Case Study in Indonesia. International Journal of Financial Research, 11(4), 203. https://doi.org/10.5430/ijfr.v11n4p203

Sunge, R., & Mudzingiri, C. (2023). A Systematic Literature Review on Migration and Remittances in Mountainous Regions: Key Takeaways for Phuthaditjhaba, Free State, South Africa. Sustainability, 15(19), 14621. https://doi.org/10.3390/su151914621

Tagne, R. F. T., Dong, X., Anagho, S. G., Kaiser, S., & Ulgiati, S. (2021). Technologies, challenges and perspectives of biogas production within an agricultural context. The case of China and Africa. Environment, Development and Sustainability, 23(10), 14799–14826. https://doi.org/10.1007/s10668-021-01272-9

Tanjung, A. H., Salam, S., Rusdi, J. F., Ermawati, Y., Novianty, I., Hendaris, R. B., & Apriliawati, Y. (2021). Flypaper effect assessment methods in the expansion of regional autonomy. MethodsX, 8, 101387. https://doi.org/10.1016/j.mex.2021.101387

Teixeira, A. F., Gonçalves, M. J. A., & Taylor, M. de L. M. (2021). How Higher Education Institutions Are Driving to Digital Transformation: A Case Study. Education Sciences, 11(10), 636. https://doi.org/10.3390/educsci11100636

Troller-Renfree, S. V., Costanzo, M. A., Duncan, G. J., Magnuson, K., Gennetian, L. A., Yoshikawa, H., Halpern-Meekin, S., Fox, N. A., & Noble, K. G. (2022). The impact of a poverty reduction intervention on infant brain activity. Proceedings of the National Academy of Sciences, 119(5), 1–8. https://doi.org/10.1073/pnas.2115649119

Vadell, E., Pemán, J., Verkerk, P. J., Erdozain, M., & De-Miguel, S. (2022). Forest management practices in Spain: Understanding past trends to better face future challenges. Forest Ecology and Management, 524(July), 120526. https://doi.org/10.1016/j.foreco.2022.120526

Vivanco Valenzuela, E., Cristina de Morais, T., Guerrero Daboin, B., Paiva Emídio Cavalcanti, M., Batista Martins Portugal, I., Soares de Souza, I., Albuquerque Lima Ribeiro, M., Bandeira de

Mello Monteiro, C., & Carlos de Abreu, L. (2021). Evolution of mortality and lethality due to covid-19 in the state of Roraima, Brazil, from march 2020 to july 2021. Journal of Human Growth and Development, 31(3), 447–457. https://doi.org/10.36311/jhgd.v31.12184

Wang, S., Liu, Y., Song, F., Xie, X., & Yu, D. (2021). Research on Evaluation System of User Experience with Online Live Course Platform. IEEE Access, 9, 23863–23875. https://doi.org/10.1109/ACCESS.2021.3054047

Warren, C., & Steenbergen, D. J. (2021). Fisheries decline, local livelihoods and conflicted governance: An Indonesian case. Ocean and Coastal Management, 202, 105498. https://doi.org/10.1016/j.ocecoaman.2020.105498

Wijaya, A., Kasuma, J., Tasenţe, T., & Caisar Darma, D. (2021). Labor force and economic growth based on demographic pressures, happiness, and human development. Journal of Eastern European and Central Asian Research (JEECAR), 8(1), 40–50. https://doi.org/10.15549/jeecar.v8i1.571

Wijaya, L. I., Zunairoh, Z., Eriandani, R., & Narsa, I. M. (2022). Financial immunity of companies from Indonesian and Shanghai stock exchange during the US-China trade war. Heliyon, 8(2), e08832. https://doi.org/10.1016/j.heliyon.2022.e08832

Wu, X., Fan, J., Sun, L., Zhang, H., Xu, Y., Yao, Y., Yan, X., Zhou, J., Jia, Y., & Chi, W. (2021). Wind erosion and its ecological effects on soil in the northern piedmont of the Yinshan Mountains. Ecological Indicators, 128(May), 107825. https://doi.org/10.1016/j.ecolind.2021.107825

Yang, J., Ji, X., Deane, D., Wu, L., & Chen, S. (2017). Spatiotemporal Distribution and Driving Factors of Forest Biomass Carbon Storage in China: 1977–2013. Forests, 8(7), 263. https://doi.org/10.3390/f8070263

Zemtsov, S. P., Komarov, V. M., & Barinova, V. A. (2022). Uncovering New Economy Potential of Russian Regions on the Basis of the Last 20 Years Dynamics' Analysis. Economy of Regions, 18(1), 92–104. https://doi.org/10.17059/ekon.reg.2022-1-7

Zhang, W., Liu, S., Wang, L., Samui, P., Chwała, M., & He, Y. (2022). Landslide Susceptibility Research Combining Qualitative Analysis and Quantitative Evaluation: A Case Study of Yunyang County in Chongqing, China. Forests, 13(7), 1055. https://doi.org/10.3390/f13071055

Zhang, Y., Waldhoff, S., Wise, M., Edmonds, J., & Patel, P. (2023). Agriculture, bioenergy, and water implications of constrained cereal trade and climate change impacts. PLOS ONE, 18(9), e0291577. https://doi.org/10.1371/journal.pone.0291577

Zhou, Y., & Liu, Y. (2022). The geography of poverty: Review and research prospects. Journal of Rural Studies, 93(April 2018), 408–416. https://doi.org/10.1016/j.jrurstud.2019.01.008

Zhou, Y., Mu, W., Zhang, J., Wen, S. W., & Pakhale, S. (2022). Global prevalence of non-tuberculous mycobacteria in adults with non-cystic fibrosis bronchiectasis 2006–2021: a systematic review and meta-analysis. BMJ Open, 12(8), e055672. https://doi.org/10.1136/bmjopen-2021-055672

Zhu, J., Yan, W., Zhu, L., & Liu, J. (2021). COVID-19 pandemic in BRICS countries and its association with socio-economic and demographic characteristics, health vulnerability, resources, and policy response. Infectious Diseases of Poverty, 10(1), 97. https://doi.org/10.1186/s40249-021-00881-w