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# Contemporary Indonesian GDP: Context of Analysis at Unemployment, Labor Force and Poor People

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**Abstract:** Indonesia is a developing country that has always prioritized sustainable development. In achieving these development goals, Indonesia needs to achieve economic growth by improving population welfare and increasing income. With the form of panel data from 34 provinces in Indonesia that have unique characteristics, the author presented them during 2015-2019. Through multiple linear regression, this study seeks to discuss the relationship of unemployment, labor force participation rate, and poor people to Indonesia's GDP growth. These findings suggest that the three macroeconomic variables have a negative impact on GDP. Regarding GDP growth, only unemployment has an actual effect, while others have no significant effect. The implications of the policies pursued by the government are not only paying attention to economic aspects but social problems that are expected to spur economic development.

**Keywords:** Economic transformations; Development balance; Multiple linear regression, Panel data; Indonesia

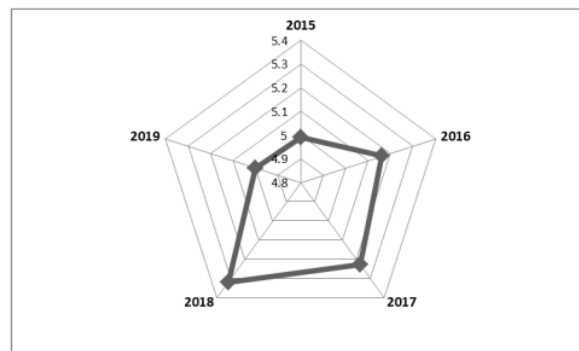
## **1. Introduction**

Many economists debate economic growth from different perspectives. Economic growth is defined as an increase in Gross Domestic Product (GDP) by considering the factors of a country, such as changes in economic structure and population growth in a certain period (Sriyana, 2019). Ideally, economic growth is a "symbol" of the success of a country and should reduce social problems such as unemployment and poverty. GDP is an effective and broad enough parameter so that it must distribute the distribution of growth in an aggregate manner for each income class (small, medium, and upward). This shows that the economy is a parameter of growth that must occur in every sector and involves many poor people to open business fields and absorb labor (Asrol and Ahmad, 2018).

In the view of economic development, GDP is widely accepted in the development of economics which ensures that GDP growth, ideally, can increase employment and reduce unemployment. Akeju and Olanipekun (2015) details the three most important elements for the economy including income distribution, productivity, and unemployment.

In addition, the population is a vital component for production factors in developing the economy, businesses producing goods and services, and other supporting activities. Puspajuita (2018) specifically informs this production factor, the thing most sensitive to "economic transformation" is labor. Economic development, which is often fast-changing, will be a locus for them. However, delays in economic development can also prevent workers from leaving an area. From this perspective, increasing GDP growth could have a positive impact on overcoming employment problems (Al-Saraireh, 2014). Conversely, if growth decreases, it can become a negative problem and create unemployment. In the 1998s, Indonesia experienced a monetary crisis and the value of its GDP even fell sharply, so that almost all investors and companies went bankrupt, which resulted in a mass workforce reduction (Pusriadi and Darma, 2017).

Figure 1 confirms that economic growth for Indonesia is actually still quite (moderate). The GDP average value implies that the achievement over the past 5 years is 5.14% where the highest growth was at the level of 5.32% in 2018 and the lowest occurred in 2015 at 4.99%. The GDP growth interval between of 4% - 5% is not yet fully optimal, because Indonesia is in a transition stage as a "developing country" in the Asian region and has experienced several economic transitions.



**Figure-1.** Frequency of GDP growth in Indonesia, 2015-2019

Source: (BPS-Statistics of Indonesia, 2020).

Soylu *et al.* (2018) consider the differences between countries with certain economic patterns. This is illustrated by several countries that are very rich, very poor, and some of them are combined or developing. Of the developing countries, it is growing faster, but some countries with a slowing trend do not even grow at all. From this review, Yilmaz (2015) found various reasons between countries to focus on the concept of economic growth itself through various efforts.

In this study, our focus is to present the influence of unemployment, labor force participation rate, and poor people on GDP with objects in Indonesia. Of the four macroeconomic variables, we divided the context for Indonesia into respective regions, so it requires detailed attention. In this first part, we have described the phenomena and problems regarding these variables. In the second part, the theoretical basis explains the relevant views from previous studies and the opinions of experts, converting to several hypotheses. For the third part, the data and method designed are described for presenting the findings. In the fourth section, we highlight the findings with in-depth discussion, and the last section will be devoted to a general evaluation of the study results.

## **2. Theory and existing literature**

Since the emergence of the "industrial revolution", economic growth is the achievement of sustainable productivity, which refers to the view of economies as the era of "modern economic growth" Solow (1956). Such growth has brought unprecedented improvements to the standard of living of decent living in industrialized countries. From the very beginning of its success, nowadays resources are important for managing resources to build sustainable productivity, also bringing about explicit capital accumulation and technological advances. The modernization of these two dimensions has been interpreted in the addition's context of all tangible assets needed to produce goods and services. In addition, investments that are non-tangible can generate benefits for the economy (such as improving the quality of human resources) through the development of science and education (Landmann, 2004; DeLong, 2002).

At present, the fact is that almost all countries are implementing eco-gene and endogenous style growth. The reality is this, Solow (1956) is well aware of the efforts to promote the quality of massive economic growth. Clearly, his theory can answer those who doubt the true meaning of the productivity of growth through the impetus of technological change. Recent findings emphasize several factors (including investment) to be the major capital that is broadly defined for structural changes and presents changes in knowledge (Stiroh, 2001). Some of these levels are important to work, so it has a real impact on including literature related to technological transformation.

Unemployment is currently a cause for concern in various economic problems. Ordine and Rose (2015) investigated the workforce that focused on the educational level of workers having the highest chance of becoming unemployed than those who graduated on time. One reason is the increase in demand in the labor market in

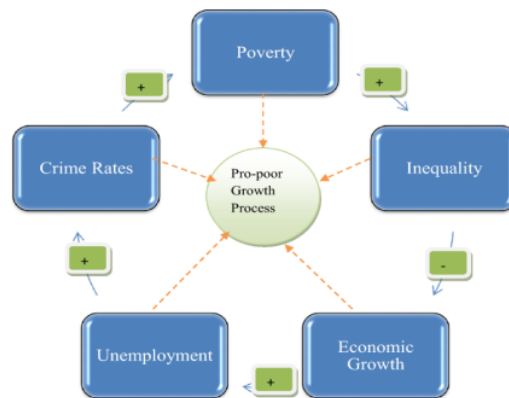
favor of prospective workers who have competence in certain skills, soft skills, and skills through their previous experiences.

For example, Okun's Law relates the two factors in macroeconomics (economic growth and unemployment) empirically in the case of the United States. Until now, it still recognized his findings as one of the fundamental "macroeconomic laws". His study confirmed the relationship between the negative rate of production growth and unemployment (Prachowny, 1993; Plosser and Schwert, 1979). If there is a decrease in real production by 1%, it has the potential to increase unemployment to 0.5% (Sezgin *et al.*, 2013). Thus, following the current state of knowledge, we propose the following two hypotheses:

**H1:** *Unemployment can negatively affect GDP growth (-).*

**H2:** *Labor force can positively affect GDP growth (+).*

Productivity growth is not interpreted as the success of economic and social development. For example, Figure 2 views the goals and achievements of growth itself as only one direction. Ideally, an increase in economic growth should reduce the unemployment rate. However, in this case, it is quite the opposite because growth is not evenly distributed and is only enjoyed by "certain people" with large capital wealth. In a positive direction (opposite), over time it will narrow jobs and people will lose their jobs. Those who do not work automatically have no income, and crime soars (Darma *et al.*, 2020). The insecurity aspect of the consequences of increasing the crime rate certainly has a significant impact on opportunities for capital flows. Investors are, of course, very concerned about the social conditions that exist in a country. In the next phase, family members (wife and children) become victims in this case, because the criminals are their husbands who surrender to the situation or imprisoned. Thus, the last stage to get "welfare" is only considered something that is impossible and in fact, inequality in terms of income distribution becomes meaningless. Therefore, the government needs to intervene with fiscal and monetary instruments in an effort to improve the situation and conditions, in order to be pro towards poverty reduction.



**Figure-2.** Cause and effect of the growth process

Source: (Adoption from Anser *et al.*, 2020).

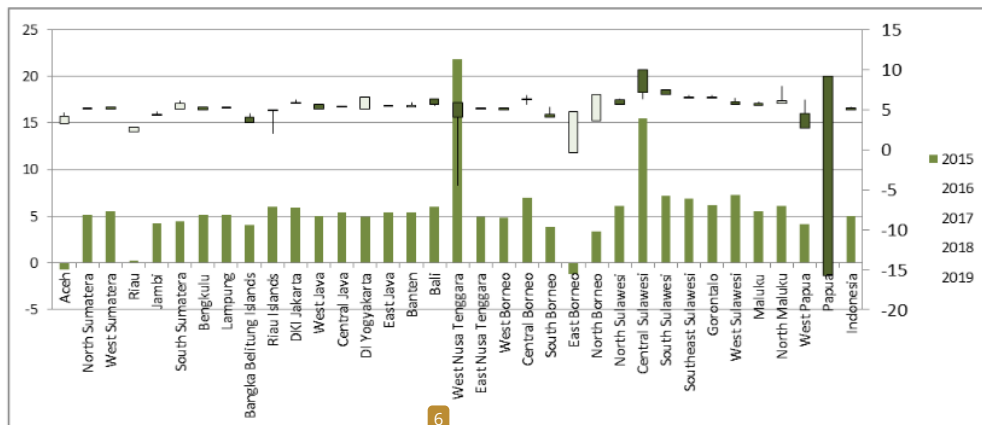


Another trend in economic growth is the disruption of population explosion. The population that continues to increase in some areas will create other problems such as unequal population density. Offers from several sectors of the economy have not matched broad market pressures on labor force demand. This is consistent with the high intensity of competition so that the level of labor balance has been disrupted, along with the knowledge and education level of job applicants sought by the market. These criteria require specific competencies for specific fields of expertise. If they do not involve the use of technological sophistication and soft skills required by the company, then they will be more exclude and do not work (Wahyuningsih *et al.*, 2020; Wijaya *et al.*, 2020; Flisikowski, 2017). Referring to these considerations, we propose hypotheses:

**H3:** *Poor people can negatively affect GDP growth (-).*

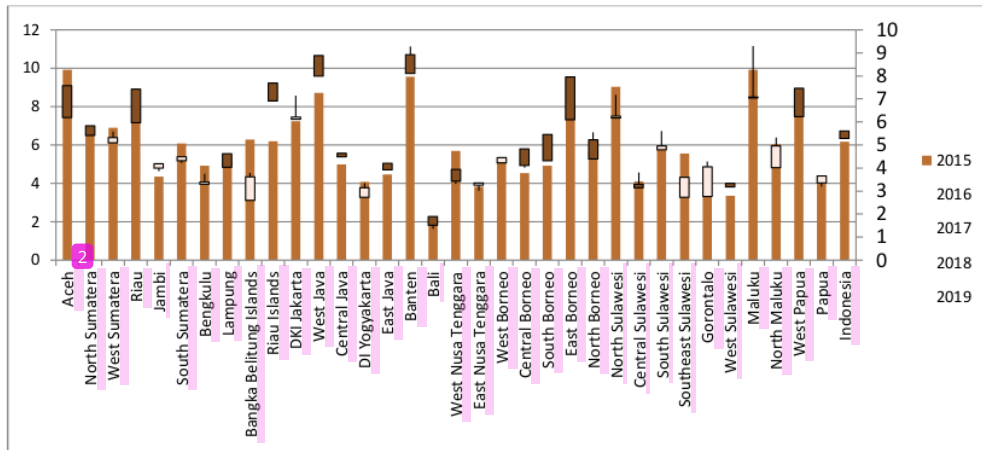
### 3. Methods and procedures

It supported the data by a secondary database (second party) got from BPS-Statistics of Indonesia. The data in question limits Indonesia's territory, which is divided into 34 provinces over five periods (2015-2019). This means that this data is a type of panel data that is an amalgamation of cross-section data and time-series data from a set of objects and certain observation times (Zainurossalamia *et al.*, 2021). We designed the study starting by formulating problems based on major phenomena, filtering data according to variables, and presenting them with an empirical analysis model (for example Suparjo *et al.*, 2021; Wijaya *et al.*, 2021). We formed the macroeconomic variables into two characters. The independent variables are the Unemployment Rate (UR), Labor Force Participation Rate (LFPR), and Poor People (PP). Meanwhile, GDP is the dependent variable or vital output from the eventual goal.



**Figure-3.** Growth rate of GDP at 2010 constant market prices by provinces in Indonesia, 2015-2019

Source: (BPS-Statistics of Indonesia, 2020).

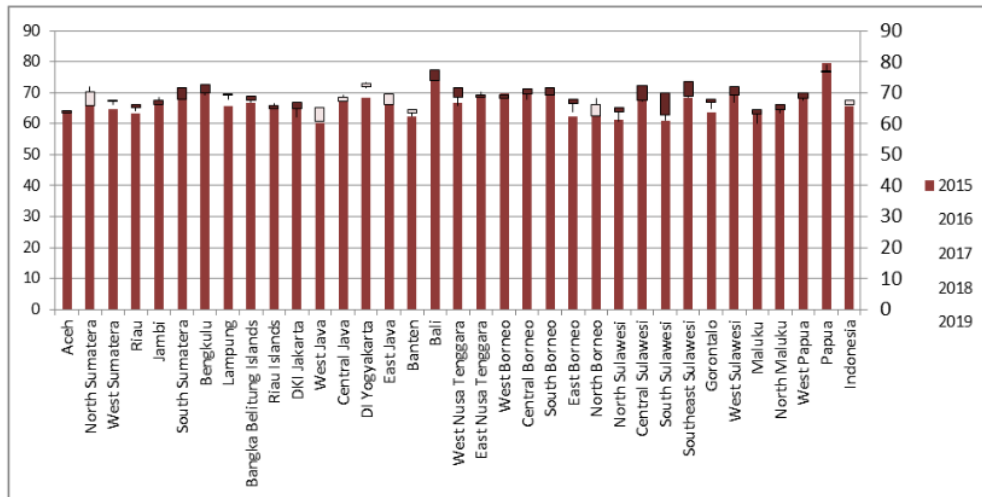


**Figure-4.** Unemployment rate by provinces in Indonesia, per August of 2015-2019  
*Source: (BPS-Statistics of Indonesia, 2020).*

Integration in variable data components, summarized from Figure 3, Figure 4, Figure 5, and Figure 6 which highlights developments in GDP, UR, LFPR, and PP. Calculations for the five-period average, the dynamics of 34 provinces in Indonesia are less consistent. This is showed by the achievement for the regions that have the highest growth, namely Central Sulawesi at 9.19% (high) and East Borneo which has the second-largest abundant natural resources (mining and quarrying sector) in Indonesia, where growth is at the level of 1.80%. The average national aggregate comparison is 5.14%.

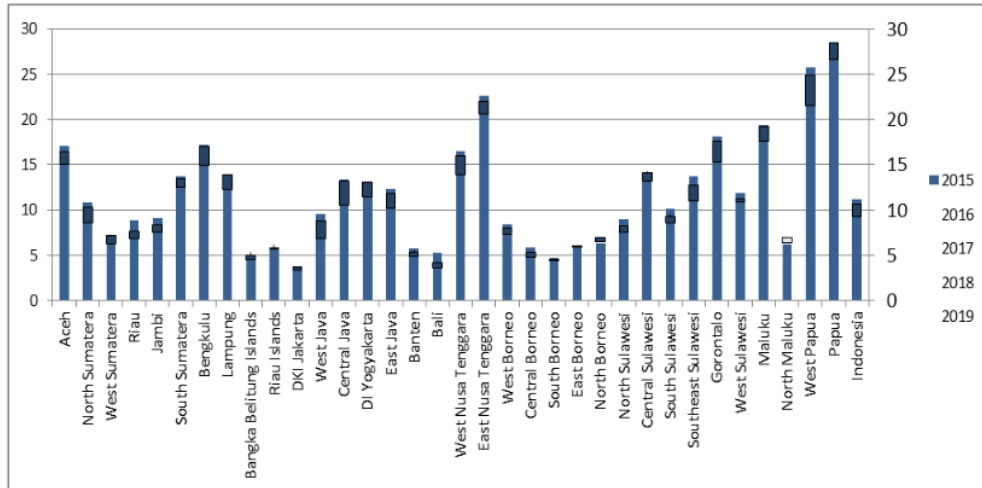
An even more astonishing fact if you look at performing the regions to increase the production capacity of goods and services in GDP through the addition of a workforce, marked by the acquisition of growth from Papua which in 2019 experienced a decline of -15.72%, in fact, it could absorb the workforce up to 77.85%. Papua is a region with very large natural reserves of minerals (first in Indonesia) has the smallest population composition so that social problems such as unemployment can be resolved. For additional information, LFPR in Indonesia is on average 66.70% and West Java is already near the limit in terms of similar indicators (62.46%).





**Figure-5.** LFPR by provinces in Indonesia, per August of 2015-2019  
*Source: (BPS-Statistics of Indonesia, 2020).*

Other problems in Indonesia such as unemployment can also hinder GDP, Banten, which should be a buffer between the center of Indonesia's capital city (DKI Jakarta and West Java), cannot be expected to be better and has become a burden for development. The UR achievement in this region is the highest among the others (8.88%), where the average case in Indonesia is 5.58%. In a similar dimension, the UR for Bali is only around 1.65%, making it the region with the lowest UR. When compared to Banten, Bali is indeed very well known as the highest foreign exchange earner for Indonesia through its tourism sector. Strangely, from the poverty side, Papua gets a red report card in reducing poverty. Papua has indeed created the highest employment opportunities in Indonesia, but not in reducing poverty. There, although the number of PPs in 2015-2019 had a downward trend, the average was the largest at 27.61%. The sign of Papua's success is contrary to LFPR and the success in DKI Jakarta in reducing UR, of course, gets its own attention. How could it not be, the UR acquisition in DKI Jakarta is the lowest compared to 33 other provinces at 3.62%. The average UR for Indonesia is quite high (10.17%).



**Figure-6.** Poor people by provinces in Indonesia, per September of 2015-2019 (percent)  
 Source: (BPS-Statistics of Indonesia, 2020).

To represent the results of the analysis, we processed the data using multiple linear regression. We group the data that has been collected into IBM SPSS version 25. The function of the 1<sup>st</sup> equation of the regression analysis method formed and adjusted according to the following conditions:

$$GDP_{it} = \beta_0 + \beta_1 UR_{it} + \beta_2 LFPR_{it} + \beta_3 PP_{it} + e_{it}$$

*Description:*  $GDP$  = Gross Domestic Product (%),  $UR$  = Unemployment Rate (%),  $LFPR$  = Labor Force Participation Rate (%),  $PP$  = Poor People (%),  $\beta_0$  = Constant,  $\beta_1\beta_2\beta_3$  = Coefficients to Estimate,  $it$  = the Period, and  $e$  = Error Term.

**Table-1.** Previous study matrix with developing area cases

Author's	Location	Components	Method	Results
Wahyuningsih et al. (2020)	Borneo Islands, Indonesia (5 objects)	Minimum wages, education, inflation rates, unemployment, and poverty	Path analysis using SPSS and Sobel test	Minimum wages and the inflation rate have had a negative effect on unemployment, while education has had a positive effect. Meanwhile, unemployment has a positive effect on poverty. Minimum wages have a negative effect on poverty through unemployment. Then, education and the inflation rate actually affect poverty through unemployment positively.

Puspadjuita (2018)	Indonesia	Unemployment rate, urbanization rate, industrialization rate, proportion of high school work force and above, elasticity of labor absorption, and provincial minimum wage	OLS using the SPSS program	With a probability level of 5%, four that the labor force has a significant effect on the unemployment rate. Industrialization has no significant effect on employment. Then, the elasticity of the labor force and the regional minimum wage cannot actually reduce unemployment, because the result is insignificant.
Feriyanto (2018)	Regency/ City in DI Yogyakarta Province (Indonesia)	Unemployment, economic growth, education, wage, and population	Panel data regression analysis using Fixed Effect Model (FEM)	Partially, wages, education, and economic growth partially had a negative effect, but the population had a positive effect on unemployment in DI Yogyakarta for the years 2010-2015.
Quy (2016)	245 year observations in 63 Vietnam Provinces	Economic growth (GDP), poverty, unemployment, public expenditure, export-import, and public investment	Regression method with 4 models	The empirical study of stage-1 concludes that public investment has a positive impact on economic growth. Stage-2, poverty and export-import negatively impact unemployment. Stage-3 concludes that public investment has a positive impact on unemployment. In stage 4, unemployment, export-import, and public investment have a negative impact on poverty.
Misini and Badivuku-Pantina (2017)	Kosovo	Unemployment and GDP	Simple linear regression	The key point of this paper is that economic growth has a positive correlation with unemployment.

Source: (Author's own).

In the next step, we also need to compare the actual differences between these studies with some very relevant findings. Thus, readers can understand in-depth the components and conclusions from previous researchers used (see Table 1).

#### 4. Empirical analysis and discussions

The relationship of macroeconomic variables such as UR (X1), LFPR (X2), and PP (X3) at this point will be in-depth about their impact on GDP (Y) in Indonesia during 2015-2019 with relevant data. It operationally formed all variables in percentage units (%) so that we do not need to simplify calculation units such as double log (Log) or natural logarithms (LN). Table 2 reviews the descriptive statistics for each variable with different results. The total sample size is 170, where the observation period for 5 periods for each object in Indonesia (34 provinces). The highest mean and standard deviation is PP, while the smallest is for UR.

**Table-2.** Descriptive statistics

Variabels	Mean	Std. Deviation	Obs.
GDP	5.2458	2.78414	170
PP	10.9681	5.81582	170
UR	5.1401	1.81647	170
LFPR	67.6165	3.70766	170

*Source:* (Author's own)

The correlation in this study summarizes the extent of the one-way relationship between variables. Table 3 implies that LFPR has a positive correlation to GDP and PP. On the one hand, none of the variables have a positive correlation for UR. GDP and PP only positively correlated for LFPR.

**Table-3.** Correlations

Components		GDP	PP	UR	LFPR
Pearson Correlation	GDP	1.000	-.036	-.121	.004
	PP	-.036	1.000	-.128	.297
	UR	-.121	-.128	1.000	-.713
	LFPR	.004	.297	-.713	1.000
Sig. (1-tailed)	GDP	.	.322	.058	.481
	PP	.322	.	.048	.000
	UR	.058	.048	.	.000
	LFPR	.481	.000	.000	.

*Source:* (Author's own).

From each of the partial effects, both UR, LFPR, and PP have a negative impact on GDP. We can interpret that if these three variables increase by 1%, it can reduce Indonesia's GDP growth constantly. Only two hypotheses (H1 and H3) can be accepted based on a literature review, while one hypothesis, namely LFPR to GDP (H2), is rejected or an increase of 1% can reduce GDP performance to reach 12.1%. Particularly for probability, only UR has a significant effect on GDP and this shows that if the Indonesian government can take the policy towards pro-poor can be taken by the Indonesian government in the long term (see Table 4).

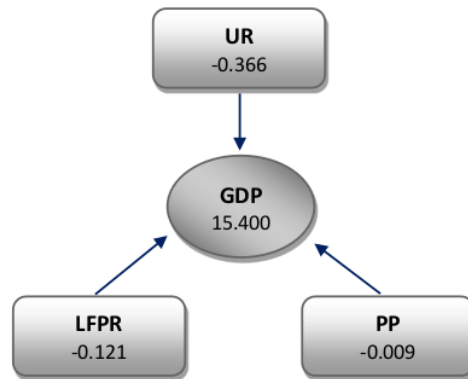
**Table-4.** Coefficients regression

Informations	Ustd. Coeff. Beta	Std. Error	T-value	Prob.	Remarks
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Constant	15.400	6.345	2.427	.016	+
PP	-0.009	.039	-.230	.819	-
UR	-.366	.169	-2.168	.032	-
LFPR	-.121	.086	-1.410	.161	-
R =	.170				
R-Square =	.029				

Source: (Author's own).

The correlation (R) is very weak (17%) because it refers to the R-value interval between 0.00 - 0.199. Then, the acquisition for R-Square (R<sup>2</sup>) reached 2.9%, which indicates that there are still around 97.1% of other variables outside the discussion of the model in this study.

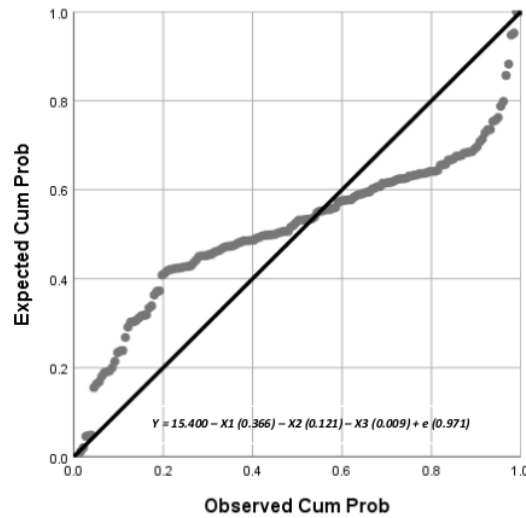


**Figure-7.** Prevalence in regression models  
Source: (Author's own).

Interestingly, Figure 7 summarizes the results of the multiple linear regression with an interpretation of the coverage of Unstandardized Coefficients Beta (UCB). Regarding the analytical framework and regression, we got the form of the 2<sup>nd</sup> equation:

$$GDP = 15.400 - 0.366 (UR) - 0.121 (LFPR) - 0.009 (PP) + 0.971 (e)$$

Figure 8 results from the normality test which is part of the eligibility requirements (classical assumptions) for regression. The normal probability test is the alternative that is effective enough to detect whether the regression model to be analyzed has normally distributed or not (Górska and Mazurek, 2021). We used the technique for the residual value and not for the individual variables (UR, LFPR, and PP to GDP). We can interpret that this regression model is workable because it has the normal residual performance.

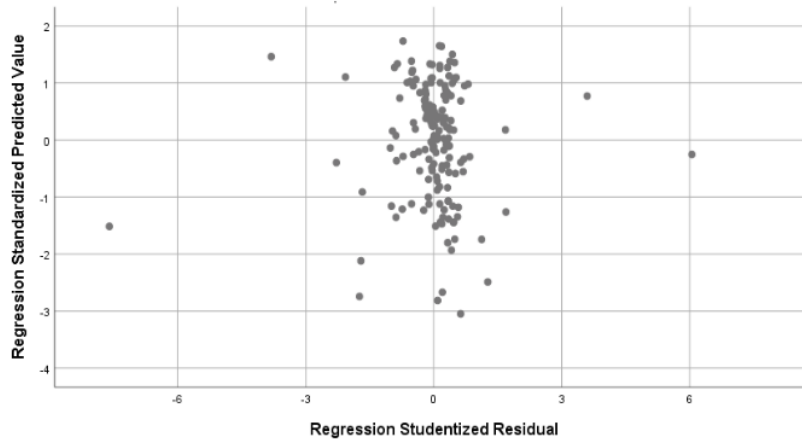


**Figure-8.** Normal PP-plot of regression  
*Source:* (Author's own).

Specifically, for the signal of the relationship between variables, Figure 9 on the scatter plot highlights a graph that is commonly used to see a pattern of the relationship between UR, LFPR, and PP in shaping GDP growth. In order to use a scatterplot, the scale of the data used meets the statistical requirements (in this case, a ratio or percentage). As a result, we spread out the pattern on the plot, we can conclude that there is no linear relationship between the variable components or tiny.

[Solow \(1962\)](#) has made a major effort in the study of "economic growth" which considers the neoclassical theory of growth with the assumption of decreasing returns over the decades. Since then, much has changed, including technological advances, knowledge developed by humans, additional capital capacity for the production of goods and services to help solve development problems. Then, then emerged the concept of "endogenous growth theory" compiled by [Lucas \(1988\)](#) and [Romer \(1986\)](#), thus opening up recent changes to investigate in a broader sense in economic development. According to [Acemoglu \(2012\)](#), since introducing this "new paradigm", many studies have highlighted the contribution of knowledge, technology, innovation, and inclusion in economic growth, making it more challenging. The changes that occur in the "endogenous growth theory", ultimately compensate for economic problems through classical and neo-classical flows of economists ([Salim, 2014](#)).





**Figure-9.** Scatterplot the variables forming GDP  
*Source:* (Author's own).

A more serious problem is the extent to which the workforce can be absorbed, along with the progress of the Indonesian economy. Quality in terms of employment can affect GDP explicitly. Something do not handle seriously if it, there will be turmoil in its growth and will have a serious impact on improving the welfare of the population. The existence of steep or wide imbalances is more because of the narrow gap in employment opportunities to get jobs in certain sectors. In less developed situations and conditions, they can lose their jobs, so they fall into other things (such as unemployment). The increasing unemployment rate will actually increase the poverty rate and this is a sign that Indonesia is in a "negative growth" phase. For case studies, other developing countries also experienced the same thing, the government would bear because of the problems of labor elasticity, unemployment and the poor. In fact, that hope falls on the flow of investment that comes to develop economic sectors. However, this is not the case so that the government actually creates "new stimulants" through fiscal and monetary policies.

The rate of employment depends on the population. Currently, Indonesia has the 4<sup>th</sup> largest population in the world after China, India, and the United States. However, this does not mean that Indonesia is not attractive to investors. The phenomenon that arises is that Indonesia is a country that is one of the favorite destinations of foreign job seekers. The level of competition, which is very competitive, can also raise additional problems, such as increasing levels of unemployment and poverty. Rapid population growth and massive migration can lead to "unbalanced" competition (Zhou, 2018). This can cause a few job vacancies, mismatching of job criteria, and potentially massive resource losses. This distortion of the "demographic bonus" puts a burden on those classified as a proportion of the population of young and old age so that productivity shrinks (Arshed *et al.*, 2017). The need continues to soar, while the nominal wages are low it also reduces the welfare of the population and creates open unemployment and poverty.

## **5. Conclusion and limitation**

This study investigates how the unemployment rate, labor force, and poor people relate to GDP growth in Indonesia, where we expand the panel data to involve all provinces in Indonesia for 5 periods. Empirical results draw on theoretical considerations and views in relevant studies. Through multiple linear regression, we find that UR, LFPR, and PP have a negative effect on GDP. The three hypotheses proposed, the LFPR, is contradictory. Meanwhile, UR and PP are in line with empirical testing. Simultaneously, these three variables also have a significant effect on Indonesia's GDP, with an acquisition probability of 0.016  $< 0.05$ . On the important side, when compared partially, only UR has a significant impact on determining GDP of 0.032.

Multidimensional issues in the economy and social, indeed need special attention from various groups. The government, scientists, staff, and society should consider the problems of unemployment, employment, and poverty to be priority issues to achieve quality economic growth. These four elements must also work together to produce programs that are in direct contact with various policies. Training is the right alternative to answer the solution to the dynamics of this study.

The limitation of this study is that it is still small or only looks at short-term development. With data for five periods, we hope future studies should pay attention to these considerations. In addition, there are still several indicators that have not included in regression analysis (such as wages, government spending, education, population, and inflation), so the calculation of the analysis is also not optimal.

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