



Assessing the Open Unemployment Rate in Bali: Evidence from Regional Panel Data in Bali

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Abstract

This study aims to analyze the effect of foreign investment, domestic investment, economic growth, wages, population, and education on the level of open unemployment in the Province of Bali. This research is a quantitative study using panel data during the period 2014 - 2018 with observations of nine regencies / cities in Bali Province. The analytical method used panel data regression. Based on the model selection test with the Lagrange multiplier, the result is obtained that the random effect model is the right model to use in this study. The results of hypothesis testing using the t test indicate that foreign investment variable partially has a negative but insignificant effect on the level of open unemployment with a coefficient of -0.000702. The domestic investment variable has a negative but insignificant effect on the level of open unemployment with a coefficient of -0.013545. The economic growth variable has a negative and significant effect on the level of open unemployment with a coefficient of -2.726141. The wage variable has a negative and significant effect on the level of open unemployment with a coefficient of -2.156453. The population variable has a positive and significant effect on the level of open unemployment with a coefficient of 0.157335. The education variable has a positive and significant effect on the level of open unemployment with a coefficient of 3.465220.

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INTRODUCTION

Economic development is an effort made to improve the welfare of the community in order to achieve a better standard of living. Development efforts undertaken not only focus on outputs but also must pay attention to the quality of inputs. One focus of economic development is to improve the quality of human resources. It aims to create human resources that are more productive so that it can support success in development. In addition, efforts to improve the quality of human resources are also carried out to reduce labor problems such as unemployment. Unemployment is one of the problems faced by various countries, especially developing countries,

including Indonesia. One of the causes of high unemployment is the low quality of human resources that is not absorbed by employment. The lower the quality of human resources owned by someone, the more difficult it is for him to get a job. One of the provinces in Indonesia that still has problems in dealing with high unemployment is Bali. At first glance, the Province of Bali is one of the provinces that is considered advanced given the extraordinary potential of tourism which certainly can absorb a large workforce as well. Nevertheless, it does not guarantee the low unemployment in Bali. Unemployment in Bali is spread almost evenly across nine districts / cities. The development of the open unemployment rate in Bali Province during the 2014-2018 periods actually tended to decrease as seen in the following figure:

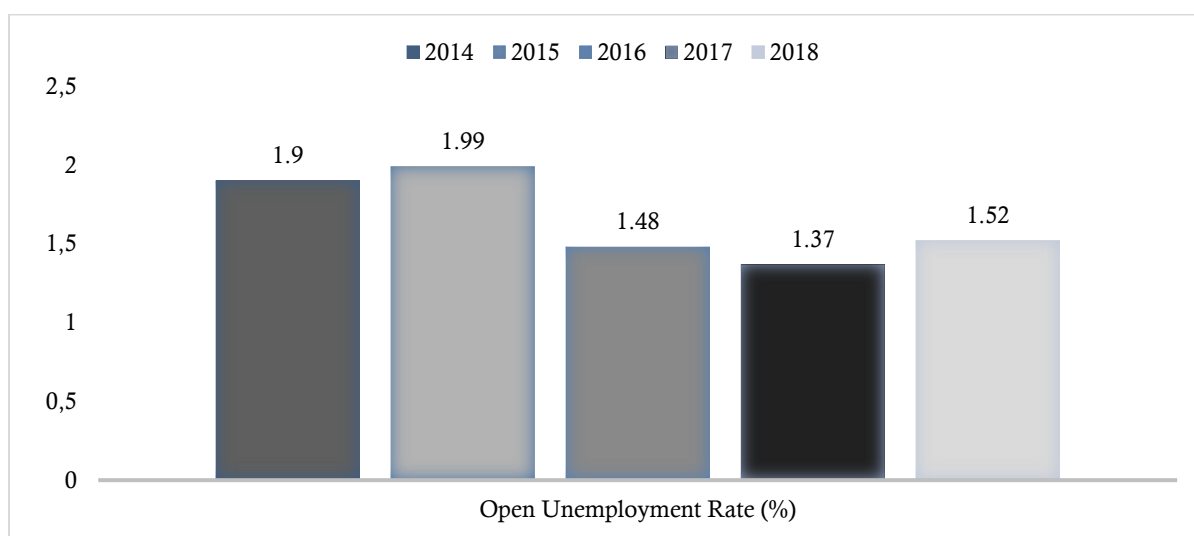


Figure 1: Development of Bali Province Unemployment Rate 2014-2018 (Percen)

Source: Central Bureau of Statistics, 2020.

Based on Figure 1, it can be seen that in the 2014-2018 unemployment rate in Bali tends to decrease, but the figure rose again in 2018 by 1.52% from the original 1.37 in 2017. When viewed from the distribution of unemployment figures from nine districts / cities in Bali, the biggest unemployment rate in 2018 is in Buleleng Regency, reaching 3.02%. Meanwhile, the region with the lowest unemployment rate is in Badung Regency with a figure of 0.38%.

Unemployment is a condition where someone who is in the labor force category does not have a job and is actively not looking for work Nanga (2005). Meanwhile, according to Sukirno (2008),

unemployment is defined as someone belonging to the labor force and actively seeking work at a certain wage level, but not getting the desired job.

One of the factors causing unemployment is economic growth (Syahril, 2014; Muslim, 2014; Zulhanafi et.al, 2013; Ahmed & Aqil, 2014; Imsar, 2018; Eita & Ashipala, 2010; Heimberger et.al, 2017). High local economic growth illustrates high production capacity that can be done by industry so that it will create greater employment. Conversely, when economic growth is sluggish, then industrial production activity decreases so that employment opportunities are low. As a result, the unemployment rate in the area will increase.

Investment is also one of the factors that influence the unemployment rate (Cahyani, 2016; Wasilaputri, 2016; Prasaja 2013, Alhdiy et.al, 2015). Investment itself is divided into two, namely foreign investment and domestic investment. Foreign investment is an investment activity to conduct business in the territory of the Republic of Indonesia which is carried out by foreign investors, both those who use foreign capital fully and those who are affiliated with domestic investors (Law of the Republic of Indonesia Number 25 of 2007 concerning Investment). Meanwhile, what is meant by domestic investment is investing to run business in the territory of the Republic of Indonesia which is carried out on domestic investors using domestic capital.

The minimum wage level is also a factor that can affect the unemployment rate in an area (Mada & Azhar, 2015; Lallukka et.al, 2019; Maqbool et.al, 2013). The wage rate has a negative effect on the unemployment rate. A relatively stable increase in the minimum wage will give companies, the economic sector, and society the ability to increase business activities and develop their businesses. When existing businesses increase and develop, the company or business can contribute to the absorption of labor so as to reduce unemployment (Firdhania & Fivien, 2017; Schmillen & Moller, 2012). In addition, the population is also a factor that can affect the unemployment rate. Residents are those who have settled in an area for at least 6 months or less than 6 months but intend to stay (Central Bureau of Statistics, 2012). When the population in an area is higher and not balanced with an increase in employment, there will be increasingly fierce competition. People who cannot compete in competing for job vacancies will certainly be unemployed (Muslim 2014; Panjawa & Soebagiyo (2014).

Another factor influencing unemployment is education (Suhendra & Wicaksono, 2016; Suprayitno et.al, 2017, Blinova et.al, 2015). Indirectly, education also influences the fulfillment of one's personal needs by increasing productivity so that they will achieve a better standard of living. The labor force that works, physical capital, and land can experience diminishing returns while science cannot. The higher education owned by the labor, the higher the chance of getting a

job (Kuncoro, 2007). However, in the study of Fitria and Junaidi (2016) mentions that education has a positive effect on the unemployment rate. It was revealed that when a workforce has a high background, it would be difficult to obtain appropriate job qualifications and increasingly fierce competition. Therefore, the purpose of this study is to analyze the effect of foreign investment, domestic investment, economic growth, wages, population, and education on the level of open unemployment in the Province of Bali.

Human resources contain two definitions. First, human resources contain the definition of work effort given in the production process. In this case, human resources reflect the quality of the effort a person gives in a certain time to produce goods or services. The second definition of human resources concerns humans who are able to carry out activities that have economic value, that is, they can produce goods and services to meet the needs of society (Simanjuntak, 1985). Human resources or often referred to as human resources are the population as a whole. In terms of population as a production factor, not all residents can act as a production factor. Only the population in the form of labor can be considered as a factor of production (Suparmoko, 1997). The workforce includes residents who are already working or currently working, who are looking for work, and who are doing other activities, such as going to school and taking care of the household (Payaman Sim Continak, 1985). Meanwhile, according to Secha Alatas (2007), labor is part of the population who is able to work to produce goods and services. The United Nations (UN) classifies the population aged 15-64 years as workers.

According to the Central Statistics Agency (BPS), in Indonesia the maximum age determination is used, based on the fact that at that age many people are already working or looking for work. According to Sim Continak (1985), the concept of labor consists of a work force and not a work force. The workforce is part of the workforce that is actually involved or trying to be involved in productive activities, namely producing goods and services. This workforce consists of groups who are working and groups who are unemployed. The working group is part of the community who is already active in activities that produce goods and services. Meanwhile, some other people who are classified as ready to work and are looking for work are included in the unemployed category.

Supply is the amount of a commodity that is willing to offer by producers during a certain period of time

and is influenced by the price of the commodity and the production costs incurred (Salvatore, 1997). The labor supply shows the number of hours spent on activities to produce something in factories, farms, other businesses, government, or not-for-profit ventures. The main determinants of the supply of labor are the population and the way the population spends its time. Labor is an input factor for the production of goods and services, therefore, the quality and quantity of labor supplied to the labor market is a very important factor in the level of production and the level of economic growth of a region.

The quantity of labor supply depends very much on, for example, the size of the population of an area, the proportion of the total population who will work and the number of hours worked per year. Meanwhile, the quality of the labor supply is highly dependent on factors such as education, skills and health conditions of the workforce (Hotchkiss, 1999).

At a given time and level of technology, there is a relationship between the amount of labor input and the amount of output. With the law of diminishing returns, each additional unit of labor input will increase output at a decreasing rate. The demand for labor is strongly influenced by two important factors. First, the demand for labor is affected by growth in the total number of available workers. The more jobs available, the demand for labor will increase. Second, the demand for labor is influenced by the types of jobs available in an economy. Demand for labor in the industrial sector, for example, will increase in line with the increase in the production of goods and services in the industrial sector in a country's economy (Kaufman and Hotchkiss, 1999).

Balance (equilibrium) is a market condition that, once achieved, tends to survive (Salvatore, 1997). This can happen if the number of items requested is the same as the number of items offered. In the labor market, market equilibrium will be achieved if a situation occurs in which the amount of labor demanded is equal to the number of workers offered, and the amount of wages demanded is the same as the amount of wages offered.

According to Sim Continak (1985), unemployed are people who do not work at all or

work less than two days during the week before the census and try to get a job. To measure the unemployment rate in an area, it can be obtained from the percentage dividing the number of unemployed by the number of job assignments and expressed in percent. According to the reasons for its occurrence, unemployment can be classified into three types, namely: a). Frictional unemployment Frictional unemployment is unemployment that occurs due to temporary difficulties in bringing together job seekers and existing job vacancies. These temporary difficulties may take the form of the mere time required during the application and selection procedures, or occur due to distance or lack of information. b). Structural unemployment Structural unemployment occurs because there are problems in the structure or composition of the economy. Such structural changes require changes in the skills of the workforce needed while job seekers are unable to adapt to these new skills. c). Seasonal unemployment Seasonal unemployment occurs because of the change in seasons. Outside the harvest season and going down to the fields, many people do not have economic activities, they are just waiting for a new season.

The Open Unemployment Rate (TPT) is a money number showing the number of unemployed people among 100 people who are included in the labor force category. Open unemployment is based on the concept of the entire workforce looking for work, both those looking for work for the first time and those who were currently employed. Meanwhile, workers classified as underemployment are workers who are still looking for full or part-time work and those who work low working hours (under one-third of normal working hours, or that means working less than 35 hours a week). However, they are still willing to accept a job, as well as those who are not looking for a job but are willing to accept the job. Workers are classified as severely underemployment if they are underemployed with working hours of less than 25 hours a week.

Investment or capital formation is an activity called investment, which is the second component that determines the level of aggregate expenditure. An investment activity can affect the rise and fall of a region's economy, because investment activities can increase output and can create jobs. Investment is a company and government expenditure, both investment in the long term and investment in the short term which aims to obtain a greater return than the cost of capital incurred to carry out investment activities.

Investment is one of the important and main factors in economic development which has been recognized by many economists, even saying that there is no development without investment. The main objective of investment activities is carried out by investors or companies, namely to obtain profits in the future. Foreign Direct Investment (FDI) is a form of investment by building, buying total or acquiring companies. Foreign investment includes investment in real assets in the form of building factories, procuring various kinds of capital goods, purchasing land for production purposes, purchasing various inventory equipment, and so on.

The provision of foreign capital is usually accompanied by the implementation of management functions, and the investors themselves retain control over the funds they have invested. FDI has more advantages. Apart from being permanent / long-term, foreign direct investment contributes to technology transfer, transfer of management skills and opens up new jobs. Employment is important to note, given that the problem of providing employment is a problem that is quite a headache for the government.

H1: Foreign investment has a significant effect on the open unemployment rate

According to Law No. 25 of 2007 article 1 states that the definition of domestic capital is capital owned by the Republic of Indonesia, an individual Indonesian citizen, or a business entity in the form of a legal entity or not. Domestic Investment according to Law No. 15 of 2007 is an activity to invest to conduct business in the territory of the Republic of Indonesia which is carried out by domestic investors and uses domestic capital. Investment has an important role in forming jobs. With investment, it will increase the stock of capital goods, it will have an effect on increasing production capacity. The higher production capacity will definitely require new workers. Harrod Domar argues that investment not only creates demand but also increases production capacity. This means that the greater the production capacity will require a larger workforce, assuming full employment. This is because investment will cause additional production factors, where one of the production factors is labor. Thus, labor absorption will increase and unemployment will decrease.

H2: Domestic investment has a significant effect on the open unemployment rate

Economic growth can be defined as the development of activities in the economy that cause goods and services produced in society to increase and the welfare of society to increase. Therefore, the high rate of economic growth is an indicator of development success which is used by the government as the main target in the implementation of development. Economic growth shows the extent to which economic activity can result in an increase in income and social welfare in a certain period. The increasing economic growth of a country or region shows that the economy is still developing well.

Economic growth is one of the performance indicators that illustrates the development results achieved, particularly in the economic sector. This indicator is important for the regions, because it can be used as material for evaluating the success of the development that has been achieved, as well as as a basis for planning and policy making in the future. GRDP is the sum of the net output value (final goods and services) generated by all economic activities, in a certain area (province and district / city), and within a certain period of time (one calendar year). The economic activities in question start from agriculture, mining, processing industry, to services (BPS, 2020). In the calculation, to avoid double counting, the net output value is given a specific name, namely value added. Statistical data at the regional level such as Gross Regional Domestic Product (GRDP) is important information for evaluation and regional development planning. PDRB data is not only used to determine the development and economic growth that occurs in an area in a certain period, it is also used to determine the role and potential of the economy in each district / city.

Economic Growth is an indicator to see the success of a country or region's economic development. The economic growth of a country or a region that continues to show improvement illustrates that the economy of the country or region is developing well. Increasing the economic growth of a country will increase the absorption of labor which is then followed by a decrease in unemployment, therefore increasing economic growth is one of the efforts to overcome the existing unemployment problem.

H3: Economic growth has a significant effect on the open unemployment rate

Wages are compensation received by a unit of labor in the form of the amount of money paid to him (Mankiw, 2000). Meanwhile, according to PP No. 8/1981, wages are an acceptance as a reward from employers to employees for a job or service that has been or will be performed and is stated or valued in the form of money determined on the basis of an approval or statutory regulation and paid on the basis of an Work agreements between employers and employees include benefits, both for the employees themselves and for their families (Tjptoherijanto, 1990). While the minimum wage is a wage that is set at a regional, regional and sub-sectoral minimum in the form of basic wages and allowances.

Labor wages are awarded depending on the minimum cost of living for workers and their families, binding statutory regulations on minimum wages for workers, marginal productivity of labor, the pressure that can be exerted by trade unions and employers' unions and differences in the types of work. The wages given by employers are theoretically considered to be the price of labor sacrificed by workers for production purposes

The relationship between the minimum wage level and the amount of unemployment rate arises as a result of the work-seeking process by workers at a certain wage level. In conditions where the growth of the workforce far exceeds the growth in employment opportunities, the reservation wage will decrease. Even though the reservation wage rate is low, competition for job offers is still tight. As a result, the time to look for work becomes longer and the probability of looking for work will be higher. Thus reducing the reservation wage rate.

The wage rate has both positive and negative effects on the unemployment rate. The positive effect is that an increase in the wage level will cause an increase in production costs, which causes an increase in product prices. An increase in product prices will get a negative response from consumers so that consumers reduce their purchases. This condition causes producers to reduce production and will have an effect on reducing the amount of labor absorbed and in the end unemployment will increase. While the negative effect can be seen from the number of supply of 55 workers, where an increase in the wage rate will

cause the supply of labor to increase so that the unemployment rate decreases.

H4: The wage rate has a significant effect on the open unemployment rate

Soebagyo, et al (2005) provide an understanding of the level of burden / dependence of the population, which is the calculation of the total population borne by each working age population. Population ages zero to fourteen plus residents over sixty-five are divided by population ages fifteen to sixty-four and multiplied by one hundred, the unit of percent. The theory expressed by Stamper (1979) states that the higher the dependency ratio the better the dependent burden on the population, although one of the positive impacts on dependency rates lies in the young population, a healthy population and an increasingly productive workforce. The low level of burden / dependence of the population will lead to a tendency to save and invest in a high level because the population of non-productive age who is borne by the population of productive age is getting smaller so that an increased level of investment appears and an increase in job opportunities through the opening of new employment opportunities. As a result, there will be a decrease in the unemployment rate.

H5: Total population has a significant effect on the open unemployment rate

Improving the quality of human resources is an effort to improve human quality, which involves developing activities in the fields of education and training. Education is one of the means in developing intelligence, knowledge abilities and skills, through good education. The quality of a nation's human resources can be further improved, this is in accordance with the goals of education itself, namely changing the attitudes of knowledge and behavior of educational participants as expected. This education is included in one of the investments in the field of human resources, which investment is called Human Capital (human capital theory). Educational investment is an activity that can be assessed by human stock, where the value of human stock after attending education with various types and forms of education is expected to increase various forms of value in the form of an increase in individual income, an increase in work productivity, and an increase in the rational value (social benefit) of individuals compared to before. taste education.

H6: Education has a significant effect on the open unemployment rate.

RESEARCH METHODS

This research is a quantitative study using secondary data in the form of panel data which is a combination of time series data and cross sections during the period 2014-2018 with observations of nine districts / cities in Bali Province. The data in this study were obtained from the central bureau of statistics of Bali Province and other sources related to this study. The variables used in this study consisted of the dependent and independent variables. The dependent variable in this study is the level of open unemployment in Bali Province, while the independent variables are foreign investment, domestic investment, economic growth, wages, population, and education.

The analytical method used panel data regression. The advantage of using panel data is panel data which is a combination of two data that is time series and cross section capable of providing more data so that it will produce a greater degree of freedom.

Regression analysis using the panel data method was used to determine the effect of foreign investment, domestic investment, economic growth, wages, population, and education on the level of open unemployment in Bali Province. The panel data model or function model that will be used is as follows:

$$OR = f(Fi, Di, Eg, Wg, Pop, Ed) \dots\dots\dots(1)$$

Where:

OR	= Open unemployment rate
Fi	= Foreign investment
Di	= Domestic investment
Eg	= Economic growth
Wg	= Wages
Pop	= Population
Ed	= Education

Base model 1 is derived to the econometrics model as follows:

$$OR_{it} = \beta_0 + \beta_1 Fi + \beta_2 Di + \beta_3 Eg + \beta_4 Wg + \beta_5 Pop + \beta_6 Ed + \mu_{it} \dots\dots\dots (2)$$

Where:

OR	= Open unemployment rate
Fi	= Foreign investment

Di = Domestic investment

Eg = Economic growth

Wg = Wages

Pop = Population

Ed = Education

β_0 = Constanta

$\beta_1 \dots \beta_6$ = Slope or direction of the regression line stating the value of Y due to changes in one unit of variable X

μ = Disturbance error

i = Cross section data

t = Time series data 2014-2018

There are three types of models used in regression analysis for panel data. They are common effect, fixed effect, and random effect. To choose the right model, several tests are conducted. The first test is the likelihood ratio test conducted to choose between the common effect model and the fixed effect model. In this test, the statistical consideration of the chi-square probability becomes the basis of Ho's rejection. If Ho is accepted and Ha is rejected with the p-value > 0.05, it means that the best model used in regression is the common effect model. Meanwhile, if Ho is rejected and Ha is accepted with the p-value < 0.05, it means that the best model used in the regression is the fixed effect model.

The second test is the Hausman test conducted to choose between the fixed effect model and the random effect model. Similar to the likelihood ratio test, in this test, the statistical consideration of the chi-square probability becomes the basis of Ho's rejection. If Ho is accepted and Ha is rejected with the p-value > 0.05, it means that the best model used in the regression is the random effect model. Meanwhile, if Ho is rejected and Ha is accepted with the p-value < 0.05, it means that the best model used in the regression is the fixed effect model.

Whereas the third test is the Lagrange multiplier test which is used to choose whether the Common Effect or Random Effect model is more appropriate to be used in the panel data regression equation model. The method often used in the Lagrange Multiplier test uses the Pagan Breusch method. The decision making criteria is if the p-value > 0.05 then the model chosen is the Common Effect, and vice versa if the p-value < 0.05 then the model chosen is Random Effect.

Furthermore, to examine the regression estimation result in this study used a partial test (t test) to examine the

research hypothesis. However, before conducting the test, a number of classical assumption tests were performed to see whether the data used for analysis in this study has feasibility or not. The Classical Assumption Tests conducted in this study include the Normality Test, the Multicollinearity Test, the Heteroscedasticity Test, and the Autocorrelation Test.

RESULTS AND DISCUSSION

In this study, to see how much the influence of foreign investment, domestic investment, economic growth, wages, population, and education have on the level of open unemployment in the Province of Bali. Then, the model is assessed first by looking at the Goodness of Fit test. There are three panel data

estimation model approaches, namely common effect model, fixed effect model, and random effect model. After estimating the model with three approaches, the next step is model selection test. Model selection test is conducted to find out the right model as a tool to analyze the data in this study. There are three stages of statistical testing conducted in this study. The first stage is the likelihood ratio test to determine the best model between the common effect model and the fixed effect model. Then the second stage is the Hausman test to determine the best model between the fixed effect model and the random effect model. The last, the third stage is the Lagrange multiplier test to determine the best model between the common effect model and the random effect model.

Based on the likelihood ratio test (chow test) that has been done, the following results are obtained:

Table 1. Results of Likelihood ratio test (chow test)

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.471643	(8.30)	0.0000
Cross-section Chi-square	59.985411	8	0.0000

Significance $\alpha = 5\%$

Source: Output of Eviews 10, 2020.

The result table of the chow test shows that the probability F value of 0.0000 is smaller than alpha 0.05, so H_0 is rejected and H_1 is accepted, which means that the appropriate model of this result is fixed

effect. After the chow test conducted with result of the fixed effect model selected, the next step is to perform the hausman test with the following results:

Table 2. Results of the hausman test
Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.743455	6	0.4525

Significance $\alpha = 5\%$

Source: Output of Eviews 10, 2020.

Based on the hausman test that has been done, the significance value is 0.4525 (significance > 0.05), then H0 is rejected and H1 is accepted, so it can be interpreted that the random effect model is better than the fixed effect model. From the results of the

chow test and the Hausman test show different results so it is necessary to do a Lagrange multiplier to determine the best model between the common effect model and the random effect model. The results of the Lagrange multiplier test are shown in the following table:

Table 3. Results of Lagrange multiplier test

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	23.06781 (0.0000)	1.479470 (0.2239)	24.54728 (0.0000)
Honda	4.802896 (0.0000)	-1.216335 (0.8881)	2.536082 (0.0056)
King-Wu	4.802896 (0.0000)	-1.216335 (0.8881)	1.779820 (0.0376)
GHM	-- --	-- --	23.06781 (0.0000)

Significance $\alpha = 5\%$

Source: Output of Eviews 10, 2020.

The table result of the Lagrange multiplier test shows the value of Breush-Pagan (BP) Probability of 0.0000. The hypothesis is that if the Breush-Pagan (BP) Probability is smaller than alpha (0.0000 < 0.05) then H0 is rejected and H1 is accepted, so the fit model

in the result above is the random effect model. The results of panel data regression using the random effect model are presented in the following table:

Table 4. Results of the panel data regression with the random effect model

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	19.19267	11.35527	1.690199	0.0992
X1	-0.000702	0.040325	-0.017416	0.9862
X2	-0.013545	0.050588	-0.267759	0.7903
X3	-2.726141	1.258966	-2.165381	0.0214*
X4	-2.156453	0.765953	-2.815384	0.0077*
X5	0.157335	0.077501	2.030103	0.0401*
X6	3.465220	1.664200	2.082213	0.0337*
R-squared	0.799036	Mean dependent var		0.263756
Adjusted R-squared	0.705252	S.D. dependent var		0.612283
S.E. of regression	0.332413	Sum squared resid		4.170580
F-statistic	8.520014	Durbin-Watson stat		2.601350

Significance $\alpha = 5\%$

Source: Output of Eviews 10, 2020.

Based on the output table of the panel data regression above, it shows that the value of R^2 with the random effect model approach is 0.799036. This means the ability of model variation of foreign investment, domestic investment, economic growth, wages, population, and education can explain the level of open unemployment in Bali Province well that is equal to 79.6%. Meanwhile, the remaining 20.4% is explained by other variables outside the model.

Based on the estimated regression result, the result obtained that the foreign investment variable has t-statistics < t-table that is $-0.017416 < 2.02439$ and probability $> \alpha$ is $0.9862 > 0.05$, so H_0 is accepted and H_a is rejected. The result of the test states that the variable of foreign investment has a negative effect on the level of open unemployment in the Province of Bali but is insignificant.

The domestic investment variable has t-statistics < t-table that is $-0.267759 < 2.02439$ and probability $> \alpha$ is $0.7903 > 0.05$, so H_0 is accepted and H_a is rejected. The results of the test state that domestic investment variable has a negative effect on the level of open unemployment in the province of Bali but is insignificant.

The economic growth variable has t-statistics > t-table that is $-2.165381 > 2.02439$ and probability $< \alpha$ is $0.0214 < 0.05$, so H_0 is rejected and H_a is accepted. The results of the test state that the variable of economic growth has a negative effect on the level of open unemployment in the Province of Bali and statistically, it can be concluded that economic growth has a significant effect on the level of open unemployment in the Province of Bali.

The wage variable has t-statistic > t-table that is $-2.815384 > 2.02439$ and probability $< \alpha$ is $0.0077 < 0.05$, so H_0 is rejected and H_a is accepted. The results of the test state that the wage variable has a negative effect on the level of open unemployment in the Province of Bali and statistically, it can be concluded that wages has a significant effect on the level of open unemployment in the Province of Bali.

The population variable has t-statistics > t-table is $2.030103 > 2.02439$ and probability $< \alpha$ is $0.0401 < 0.05$, so H_0 is rejected and H_a is accepted. The results of the test state that the population

variable has a positive influence on the level of open unemployment in the Province of Bali and statistically, it can be concluded that the population has a significant effect on the level of open unemployment in the Province of Bali.

The education variable has t-statistic > t-table that is $2.082213 > 2.02439$ and probability $< \alpha$ is $0.0337 < 0.05$, so H_0 is rejected and H_a is accepted. The results of the test state that the education variable has a positive effect on the level of open unemployment in the Province of Bali and statistically, it can be concluded that education has a significant effect on the level of open unemployment in the Province of Bali.

Discussion

The effect of foreign investment on the level of open unemployment in the Province of Bali

The estimation results of the panel data regression show that foreign investment variable has a negative but insignificant effect on the level of open unemployment in Bali Province. The coefficient value of -0.000702 shows that if foreign investment increases by 1 unit, the open unemployment rate will decrease by 0.000702 . The results of this study are in line with research conducted by Prasaja (2013) which states that foreign investment has a negative effect on the unemployment rate. Another research conducted by Cahyani (2016) also shows that investment can negatively affect the unemployment rate.

The results of this study are consistent with Harrod-Domar's theory which states that investment not only creates demand, but also enlarges production capacity. Investment or capital formation is very important for companies to increase the stock of capital goods. Increased stock of capital goods can have a positive impact on the economy, because an increase in the stock of capital goods will increase production activities and employment opportunities. High employment opportunities will reduce unemployment in the province of Bali.

The effect of domestic investment on the level of open unemployment in the Province of Bali

Based on the estimation results of the panel data regression, it is obtained the results that the

domestic investment variable has a negative but insignificant effect on the level of open unemployment in the Province of Bali. The coefficient value of -0.013545 shows that if domestic investment increases by 1 unit, the open unemployment rate will decrease by 0.013545. The results of this study are in line with the research of Cahyani (2016) and the research of Wasilaputri which show that investment has a negative effect on the unemployment rate.

Investment or domestic investment is no less important for foreign investment in reducing the unemployment rate. To increase the production of goods and services, one thing that can be done is by investing. When the production of goods and services can be increased, it will open up more employment opportunities and will certainly be able to reduce unemployment. So far, we know that the province of Bali is a province that has strong investment attractiveness because it is supported by the progress of the tourism sector. This certainly can attract investors, especially from within the country to invest their capital in Bali. Thus, it will help open up bigger jobs.

The effect of economic growth on the level of open unemployment in the Province of Bali

The estimation results of the panel data regression show that the variable of economic growth has a negative and significant effect on the level of open unemployment in the Province of Bali. The coefficient value of -2.726141 shows that if economic growth increases by 1 unit, the open unemployment rate will decrease by 2.726141. The results are in line with Anggoro's study (2015) which states that economic growth has a negative and significant effect on the unemployment rate. Another research conducted by Firdhania & Fivien (2017) also shows the same results that economic growth has a positive effect on the unemployment rate.

When economic growth increases, it means that there has been an increase in the production of goods and services, because an increase in production of goods and services will cause an increase in the factors of production one of which is the increase in labor demand will result in a decrease in the unemployment rate, and vice versa.

It cannot be denied that economic growth has a significant effect on the unemployment rate in Bali. During this time, economic growth in Bali is largely supported by the industrial sector. The growing industrial sector due to supported by the rapid development of tourism provides broad job opportunities for the people of Bali.

The effect of wage on the open unemployment rate in Bali Province

The estimation results of the panel data regression show that the wage variable has a negative and significant effect on the level of open unemployment in the Province of Bali. The coefficient value of -2.156453 shows that if wages increase by 1 unit, the open unemployment rate will decrease by 2.156453. The results of the study are in line with the research of Priastiwi & Handayani (2019) which explains that the level of wages has a negative and significant effect on unemployment. Another research conducted by Cahyani (2016) also shows that wages have a negative effect on unemployment. Wage rigidity can be a factor that affects unemployment. A decrease in the production process in the economy will result in a shift or decrease in labor demand. As a result, there will be a decrease in the amount of wages set. With the existence of wage rigidity, in the short term, the level of wages will increase to the original wage rate. This will lead to excess supply of labor and result in unemployment.

An increase in the minimum wage that is relatively stable will give the ability for companies, the economic sector, and the community to be able to increase business activities and business development and when existing businesses increase and expand the companies or businesses in Bali. This is consistent with the explanation of Mankiw (2007) that if wages set in an area are too low will result in a high amount of unemployment occurring in the area.

The effect of population on open unemployment in the Province of Bali

Based on the estimation results of the panel data regression, it shows that the population variable has a positive and significant effect on the level of open unemployment in the Province of

Bali. The coefficient value of 0.157335 shows that if the population increases by 1 unit, the open unemployment rate will also increase by 0.157335. The results of the study are in line with the research of Priastiwi & Handayani (2019) which explains that the population has a positive and significant effect on unemployment. Another study conducted by Prasaja (2013) also shows the same results that the population has a positive effect on the unemployment rate.

Like the classical opinion that if the population has been already too many, the law of diminishing returns will affect the function of production, marginal production will decrease. Therefore, excessive population growth will reduce the level of economic activity because the productivity of each population has become negative. This causes the prosperity of the people to decline again and national income to decline. This will have an indirect impact on the increasing number of unemployed.

The population variable has a significant effect on the unemployment rate in Bali because the population in Bali always increases every year. The increasing population, of course, will be able to increase the unemployment rate if it is not balanced with the availability of employment. This is in accordance with Malthus's theory which states that high population growth will cause more consumption needs than the need to invest, so that the available resources are only allocated more to high labor growth than to increase capital to each labor. This will then cause slow labor absorption in modern sectors and increase unemployment.

The effect of education on open unemployment in the Province of Bali

Based on the estimation results of the panel data regression, it shows that the education variable has a positive and significant effect on the level of open unemployment in the Province of Bali. The coefficient value of 3.465220 shows that if the population increases by 1 unit, the open unemployment rate will also increase by 3.465220. The results of the study are in line with research by Fitri & Junaidi (2016) which shows that education has a positive and significant effect on the unemployment rate. Increasing one's education

increases one's productivity thereby increasing output, when there is an increase in output, it will have an effect on increasing labor demand so as to reduce the amount of unemployment

Different results are shown by research conducted by Muslims (2014) and Sirait (2013) which state that education has a negative and significant effect on the unemployment rate. If we look at the field, when a person has a high level of education, of course the person will find it easier to get a job because he has the educational qualifications expected by the job provider. However, in this current era, education does not guarantee a person to get a job easily because of many other factors that are needed such as certain skills, knowledge, and expertise. Especially now that competition in getting jobs is getting tougher which makes job seekers not all absorbed despite having good educational qualifications. In addition, when a person has a high educational background, that person will usually look for a job that is in accordance with his educational background and is reluctant to take up a job which qualification is lower than he has. Then the person prefers to be unemployed thereby increasing unemployment.

CONCLUSION

Based on the results of the research and discussion above, it can be concluded that the foreign investment variable has a negative but insignificant effect on the level of open unemployment in Bali Province. The coefficient value of -0.000702 shows that if foreign investment increases by 1 unit, the open unemployment rate will decrease by 0.000702.

The domestic investment variable has a negative but insignificant effect on the level of open unemployment in Bali Province. The coefficient value of -0.013545 shows that if domestic investment increases by 1 unit, the open unemployment rate will decrease by 0.013545.

The economic growth variable has a negative and significant effect on the level of open unemployment in Bali Province. The coefficient value of -2.726141 shows that if economic growth increases by 1 unit, the open unemployment rate will decrease by 2.726141.

The wage variable has a negative and significant effect on the level of open unemployment in Bali Province. The coefficient value of -2.156453 shows that if wages increase by 1 unit, the open unemployment rate will decrease by 2.156453.

The population variable has a positive and significant effect on the level of open unemployment in Bali Province. The coefficient value of 0.157335 shows that if the population increases by 1 unit, the open unemployment rate will also increase by 0.157335.

The education variable has a positive and significant effect on the level of open unemployment in Bali Province. The coefficient value of 3.465220 shows that if the population increases by 1 unit, the open unemployment rate will also increase by 3.465220.

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