Factors Affecting Educated Unemployment and Poverty in Regency / Cities of Bali Province 2015-2019


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Abstract - The purpose of this study are to analyze the effect of education, the working age population, and the level of wages on educated unemployment; the effect of education, the population of working age, the level of wages and educated unemployment on poverty; and the effect of education, the population of working age, the level of wages on poverty through educated unemployment. This research is conducted in regencies / cities in Bali Province using data from 2015-2019 and analyzed using path analysis. The results show that education and the level of wages have negative effect on educated unemployment, the working age population has a positive effect on educated unemployment, education and the working age population have negative effect on poverty and educated unemployment have a positive effect on poverty. All of these effects are significant.

Keyword: education, working age population, wage rates, educated unemployment, poverty

I. INTRODUCTION

Bali is known as one of Indonesia's tourism icons which has a wide variety of tourism potentials. Through the tourism sector, the economic structure of the Province of Bali is unique because most of the community's sources of livelihood come from the tourism sector, while sectors other than tourism have a role as a supporting sector (Paramita and Purbadharmaja, 2015). In general, the level of welfare of the population in Bali Province is quite good because most of the population works in the tourism sector. This can be seen in data from the Central Bureau of Statistics of Indonesia, Bali Province succeeded in reducing the number of poor people from 196.71 thousand in 2015 to 163.85 thousand in 2019, although it has fluctuated from year to year. Gradually, the provincial government of Bali has implemented efforts to reduce the number of poor people through regulation and access to adequate facilities.

Of the 34 provinces in Indonesia, Bali Province is one of the provinces that have a poverty rate below the national rate, namely 9.22 percent. Nationally, the percentage of poverty in Bali is the second lowest after Jakarta, namely 3.42 percent. Bali has the second lowest percentage of poverty rate does not mean that the problem is completely resolved. There are still several districts that have a fairly high poverty rate. The high poverty rate is caused by differences in the economic resources and potential of each region, so that development progress in that region is also different. The lowest poverty rate in Bali was in Badung Regency at 1.78 percent in 2019, while the highest was Karangasem Regency at 6.25 in the same year. The uneven development that occurs in Bali Province is suspected to be one of the causes of poverty. The government only focuses on the development of the southern part of Bali, such as Badung Regency and Denpasar City, so that these two areas are among the most prosperous areas than other districts in Bali.

According to Fahar (2015) poverty arises because of a gap between the availability of essential resources and the ability of individuals or households to meet basic needs. Sharp, et al in Mudrajat Kuncoro (2006: 209) identify the causes of poverty from an economic perspective. First, from a macro perspective, poverty arises because of the unequal patterns of ownership of resources which result in an unequal distribution of income. Second, poverty arises from differences in the quality of human resources. The three poverty arise due to differences in access to capital. These three causes of poverty are based on the Vicious Circle of Poverty theory put forward by Nurkse (1953). Many factors cause poverty in Bali, such as unemployment, low levels of education, wages, and a high number of working age population without being balanced with the availability of employment opportunities. All of these factors influence each other, and it is difficult to ascertain which are the main causes of poverty or which factors have a direct or indirect effect.

The problem that occurs is unemployment with high school graduates and above has a higher rate compared to unemployed workers with primary and junior high school graduates. This is of course a problem because high school graduates and above generally have more abilities when compared to elementary or junior high school graduates so they are considered more ready to enter the job market. However, in reality, what can be seen in the data on high school graduates and above is precisely the contributor to the highest unemployment rate in Bali Province. Another problem that arises and needs attention is that Vocational High School and Diploma graduates are unemployed, which is more dominant than General High School and Bachelor graduates. This should not be the case because Vocational High School and Diploma graduates have more specialized skills in their fields than General High School and Bachelor graduates. Therefore, this is a serious problem for educational
institutions which are considered to have failed in creating a skilled workforce who should be job seekers who are the biggest contributor to unemployment in Bali Province.

Policies related to human capital development are needed to free someone from the shackles of chronic poverty. One of them is through education, where education is a person's long-term investment in order to permanently get out of poverty (Dariwardani, 2014). The low level of education taken by the population has resulted in increased poverty and the poverty that has occurred also has an impact on limiting people's access to education (Manea et al., 2015). Education, which should be the key to empowering the workforce in improving skills and knowledge to reduce the unemployment rate, is actually one of the reasons that causes educated unemployment (Ewubare & Ogbuagu, 2017). Purnami and Saskara (2013) provide information that the education variable has a negative and significant effect on the number of poor people in the districts / cities of Bali Province.

Apart from education, the working age population is also a factor affecting poverty. The working age population is the population aged 15 years and over. When the number of working-age population increases and is not matched by quality and new employment opportunities, it will increase competition in looking for work, which will lead to unemployment (Ryan et al., 2017). This is in accordance with Malthus's theory which states that high population growth will cause consumption needs that are more than the need to invest so that it will cause slow absorption of labor in modern sectors and increase unemployment. Malthus also concluded that the quantity of humans will fall into hunger poverty, in the long run no technological progress will be able to divert the situation because the increase in food supply is limited while population growth is unlimited, and the earth is unable to produce food to maintain human survival.

Poverty is not solely caused by the ability of economic sectors to absorb labor, but also from the perspective of the wages set by the government (Seran, 2017). Although it is not the main reason, minimum wages have an important effect on certain groups with high unemployment (Mankiw, 2014: 110). Wages are compensation received by a unit of workforce in the form of money paid to them. According to Kaiser and Kuhn (2016) in Denmark, it shows that wage subsidies can help absorb labor in the industrial sector which can lead to reduced educated unemployment. Based on the description above, the hypotheses that can be put forward are:

H1: Education and wage levels directly have a negative effect on educated unemployment and poverty in the regencies / cities of Bali Province
H2: The population of working age has a direct positive effect on educated unemployment and poverty in the regencies / cities of Bali Province
H3: Educated unemployment has a direct positive effect on poverty in the Regency / City of Bali Province
H4: Education, working age population, and the level of wages indirectly affect poverty through educated unemployment in districts / cities of Bali Province

II. METHODS

The research method used is a quantitative method that is associative with the form of casual relationships. This research was conducted in the Province of Bali, which includes all existing districts / cities. This location was chosen because Bali is one of the provinces that contribute to the lowest poverty and open unemployment rates in Indonesia, however, from the data obtained, the percentage of poor people in each Regency / City in Bali Province fluctuates, and there is a large difference in the percentage of poor people between districts. / Cities in Bali Province as well as the unemployment rate in Bali Province tend to be higher than the level of high school education and above. The data used in this study is data published by the Bali Province Central Bureau of Statistics or also known as secondary data. Endogenous variable (Y1) is a variable that is influenced by exogenous variables. The endogenous variable in this study is poverty. Variable (X) is a variable that affects endogenous variables. In this study the exogenous variables included education, working age population, and wage levels. The intermediate variable (Y1) is a variable that has multiple functions, namely in one relationship as an exogenous variable and in another as an endogenous variable. The intermediary variable in this study is educated unemployment. This study used non-participant observation data collection methods. The analysis technique used is the path analysis technique. The following is the form of the equation used in research.

\[ Y_1 = \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e_1 \] ........................................... (1)
\[ Y_2 = \beta_4X_1 + \beta_5X_2 + \beta_6X_3 + \beta_7Y_1 + e_2 \] ........................................... (2)

Description:

<table>
<thead>
<tr>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>Y1</th>
<th>Y2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Working Age Population</td>
<td>Wage</td>
<td>Educated Unemployment</td>
<td>Poverty</td>
</tr>
</tbody>
</table>

\( \beta_1 - \beta_7 \) = Regression coefficient for X and Y1
\( e_1, e_2 \) = Error
III. RESULTS AND DISCUSSION

A. Path Analysis Results

The test was carried out using SPSS version 25. This study was conducted to analyze the effect of education, working age population, and wage levels on poverty in regencies / cities of Bali Province with educated unemployment as an intervening variable. This section will be solved in stages through a regression equation model as follows:

1) Model 1 : Effect of education (X1), working age population (X2), and the wage rate (X3) on educated unemployment (Y1)
2) Model 2 : The effect of education (X1), the working age population (X2), the wage level (X3) and educated unemployment (Y1) on poverty (Y2)

| Table 1. Regression Test Results, The Effect of Education, Working Age Population and Wage Levels on Educated Unemployment |
|-----|----------------|----------------|--------|--------|-------- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|       | B | Std. Error | Beta |        |        |
| 1 (Constant) | 10.151 | 1.442 | 7.041 | .000 |
| Education | -6.24 | .162 | -.662 | -3.839 | .000 |
| Working Age Population | 5.102E-6 | .000 | .585 | 3.597 | .001 |
| Wage Levels | -1.981E-6 | .000 | -.353 | -2.737 | .009 |

Test Results, 2020

Based on the results of the analysis, it can be concluded that education has a negative and significant effect on educated unemployment in the Regency / City of Bali Province as indicated by the standard beta coefficient of -0.662 and a probability value of 0.000 ≤ 0.05. This means that for each increase in the average length of schooling, the number of educated unemployment in the Regency / City of Bali Province will experience a decline of 0.662. The negative relationship between education variables and educated unemployment obtained in this study is supported by Prihanto and Achmad (2018) which state that education variables have a negative and significant effect on educated unemployment.

The working age population variable has a standardized beta coefficient value of 0.585 and a probability value of 0.001 ≤ 0.05. This means that the working age population variable has a positive and significant effect on educated unemployment in the Regency / City of Bali Province. This result is in accordance with Malthus's theory of population, which states that the larger the population, the more work force will be created. If the number of job opportunities is not able to keep up with the workforce, the number of unemployed will increase. This result is supported by Ryan et al., (2017) and Arta & Sudibya (2018) which state that the proportion of the working age population has a positive and significant effect on educated unemployment. When the proportion of the working age population increases and is not matched by quality and new employment, it will increase competition in looking for work, which will lead to unemployment.

The wage level variable has a standardized coefficient beta of -0.353 and a probability value of 0.009 ≤ 0.05. This means that the wage rate variable has a negative and significant effect on educated unemployment in the Regency / City of Bali Province. The results are in accordance with the research hypothesis, when the minimum wage increases it will reduce the educated unemployment rate, a negative sign in the resulting equation indicates that an increase in the minimum wage level will reduce educated unemployment in regencies / cities in Bali Province. Adriani al (2019) also state that wage levels have a negative and significant effect on educated unemployment.

| Table 2. Regression Test Results, Effects of Education, Working Age Population, Wage Levels and Educated Unemployment on Poverty |
|-----|----------------|----------------|--------|--------|-------- |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|       | B | Std. Error | Beta |        |        |
| 1 (Constant) | 11.453 | 1.026 | 11.167 | .000 |
| Education | -.667 | .091 | -.681 | -7.356 | .000 |
| Working Age Population | -1.786E-6 | .000 | -.197 | -2.294 | .027 |
| Wage Levels | -5.490E-6 | .000 | -.094 | -1.457 | .153 |
| Educated Unemployment | .161 | .075 | .155 | 2.155 | .037 |

Test Results, 2020

Education has a negative and significant effect on poverty in the Regency / City of Bali Province as indicated by the standardized beta coefficient value of -0.681 and a probability value of 0.000 ≤ 0.05, which means that H0 is rejected and H1 is accepted. Education is an investment in human resources in order to have a better life. This is in accordance with Margarani et al (2016), Yanthi and Marhaeni (2015) and Purnani and Saskara (2013) which state that the education variable has a negative and significant effect on the number of district / city poor people in Bali Province. Nurkse's vicious cycle of poverty theory states that there are several factors causing poverty, one of which is failure in education. This negative effect implies that the higher the level of education, the lower the poverty level of the population and vice versa.

The working age population has a beta standardized coefficient value of -0.197 and a probability value of 0.027 ≤ 0.05, which means that H0 is rejected and H1 is accepted, this result is contrary to the research hypothesis or the standardized coefficient beta value is negative. Based on these results, the working age population has a negative and significant effect on poverty in the Regency / City of Bali Province as indicated by the standard beta coefficient of -0.662 and a probability value of 0.000 ≤ 0.05. This means that for each increase in the average length of schooling, the number of educated unemployment in the Regency / City of Bali Province will experience a decline of 0.662. The negative relationship between education variables and educated unemployment obtained in this study is supported by Prihanto and Achmad (2018) which state that education variables have a negative and significant effect on educated unemployment.
poverty in the Regency / City of Bali Province. If the number of working age population increases, poverty in the Regency / City of Bali Province will decrease, and vice versa. This result is supported by Astuti (2015). The working age population has a negative effect on poverty because an increase in the number of the working age population is followed by the quality of adequate human resources so that it becomes reliable development capital.

The test results show that the level of wages (minimum wages) has no significant effect on poverty in the Regency / City of Bali Province due to the standardized beta coefficient value of -0.094 and the probability value of 0.153 > 0.05, which means that H0 is accepted and H1 is rejected. This is not in accordance with the research hypothesis. However, this result is in line with Ramdhani et al., (2018) which states that the influence of the city minimum wage level variable is not significant to the poverty level in Samarinda City. This negative and insignificant effect on the poverty rate can be caused by various factors, such as the increasing number of people of working age who do not work. This has resulted in an increase in the minimum wage level that occurred in the regencies / municipalities of Bali Province which did not have a significant impact on reducing poverty levels because the increase in wages only affected the population who had jobs. In addition, according to data the informal sector still dominates employment in Bali Province. The increase in minimum wages that has occurred has not yet fully reached the workers who work in the informal sector.

The educated unemployment variable has a standardized beta coefficient of 0.155 and a probability value of 0.037 ≤ 0.05, which means that H0 is rejected and H1 is accepted. This means that educated unemployment has a positive and significant effect on poverty in the Regency / City of Bali Province. The positive and significant influence of the educated unemployment rate on poverty in the Regency / City of Bali Province is in accordance with the research hypothesis. Hu & Giuliano (2017), Malat & Timberlake (2013), Williams (1986) and Cutler et al (1991) also stated that unemployment has a positive and significant effect on poverty. Unemployment that occurs in Bali Province is dominated by unemployed people with high school education degree and above. An important factor behind this phenomenon of educated unemployment is the long transition between education and the job market (Pratomo, 2017). One third of unemployed people are young workers who have to wait for approximately one year to enter the labor market, especially the formal sector, which is also called choosy educated job seekers (Allen, 2016). Educated workers tend to choose unemployment rather than having to work because the job is not in accordance with their educational background. The longer a person is unemployed, the ability to fulfill the needs of a decent life will gradually decrease, so that it is possible for people who are unemployed for too long to continue into poverty. The increase in the percentage of the number of poor people in a region reflects the lower level of welfare in the country (Samputra and Munandar, 2019).

### B. Standard Estimated Error Values

e1 which shows the amount of the variance of the Educated Unemployment variable (Y1) that cannot be explained by the Education (X1), Working-Age Population (X2) and Wage Level (X3) variables, calculated by the formula:

\[ e_1 = \sqrt{1 - R^2_1} \]
\[ = \sqrt{1 - 0.446^2} \]
\[ = \sqrt{1 - 0.198916} \]
\[ = \sqrt{0.801084} \]
\[ = 0.89503296 \rightarrow 0.90 \]

E2 which shows the number of variants of the Poverty variable (Y2) that is not explained by Education (X1), Working-Age Population (X2), Wage Level (X3) and Educated Unemployment (Y1), it can be calculated using the following formula.

\[ e_2 = \sqrt{1 - R^2_2} \]
\[ = \sqrt{1 - 0.886^2} \]
\[ = \sqrt{1 - 0.784996} \]
\[ = \sqrt{0.215004} \]
\[ = 0.4636852 \rightarrow 0.46 \]

### C. Model Validity Examination

To check the validity of the model, there is an indicator for checking, namely the total coefficient of determination which can be calculated as follows.

\[ R^2_m = 1 - (e_1)^2(e_2)^2 \]
\[ = 1 - (0.90)^2(0.46)^2 \]
\[ = 1 - (0.81)(0.2116) \]
\[ = 1 - (0.171339) \]
\[ = 0.828604 \rightarrow 0.83 \]

Description:

\[ R^2_m = \text{Total coefficient of determination} \]
\[ e_1, e_2 = \text{Standard error value estimate} \]

Based on the calculation of the total coefficient of determination, the result is 0.83, which means that 83 percent of the variation in poverty in regencies / cities in Bali Province is influenced by variations in education, working age population, wage levels and educated unemployment. The remaining 17 percent is influenced by other variables not included in the model.

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D. Indirect Effect Test Results (Sobel Test)

The indirect effect test is a way to test the strength of the indirect effect between the exogenous variable (X) on the endogenous variable (Y1) through the intervening variable (Y2).

1) The mediation test of the Educated Unemployment variable (Y1) on the relationship of Education (X1) to Poverty (Y2).

\[
S_{β_1β_7} = \sqrt{β_2^2S_{β_2}^2 + β_3^2S_{β_3}^2}
\]

\[
S_{β_1β_7} = \sqrt{(0.161)^2(0.162)^2 + (-0.624)^2(0.075)^2}
\]

\[
S_{β_1β_7} = 0.447166
\]

\[
S_{β_1β_7} = 0.668704718 \rightarrow 0.669
\]

To test the significance of the indirect effect, use the z value of the ab coefficient with the following formula.

\[
z = \frac{β_2β_7}{S_{β_1β_7}}
\]

\[
z = \frac{(-0.624)(0.161)}{0.669} = -0.150
\]

\[Z_{count} \leq 1.96\] this means \(H_0\) accepted and \(H_1\) rejected. Thus, educated unemployment is not a mediating variable of education on poverty in the Regency / City of Bali Province.

2) Educated Unemployment mediation test (Y1) on the relationship of the Working Age Population (X2) to Poverty (Y2)

\[
S_{β_2β_7} = \sqrt{β_2^2S_{β_2}^2 + β_3^2S_{β_3}^2}
\]

\[
S_{β_2β_7} = \sqrt{(0.161)^2(0.000)^2 + (5.102E-6)^2(0.075)^2}
\]

\[
S_{β_2β_7} = 3.8265E-7
\]

To test the significance of the indirect effect, use the z value of the ab coefficient with the following formula.

\[
z = \frac{β_2β_7}{S_{β_1β_7}}
\]

\[
z = \frac{(5.102E-6)(0.161)}{3.8265E-7} = 2.15
\]

\[Z_{count} 2.15 > 1.96\] This means that the working age population affects poverty indirectly through educated unemployment in the Regency / City of Bali Province. It can be interpreted that the educated unemployment variable is a mediating variable of the working age population towards poverty in the Regency / City of Bali Province.

3) Educated Unemployment mediation test (Y1) on the relationship of Wage Level (X3) to Poverty (Y2)

\[
S_{β_3β_7} = \sqrt{β_2^2S_{β_2}^2 + β_3^2S_{β_3}^2}
\]

\[
S_{β_3β_7} = \sqrt{(0.161)^2(0.000)^2 + (-1.981E-6)^2(0.075)^2}
\]

\[
S_{β_3β_7} = 1.48575E-7
\]

To test the significance of the indirect effect, use the z value of the ab coefficient with the following formula.

\[
z = \frac{β_2β_7}{S_{β_1β_7}}
\]

\[
z = \frac{(-1.981E-6)(0.161)}{1.48575E-7} = -2.15
\]

Hence, \(Z_{count} -2.15 \) is accepted and \(H_1\) is rejected. Thus, educated unemployment is not a mediating variable of the level of wages on poverty in the Regency / City of Bali Province.
IV. CONCLUSION

Based on the results of the previous discussion, it can be concluded that education and wage levels have a negative and significant effect on educated unemployment in the Regency / City of Bali Province, and the working age population has a positive and significant effect on educated unemployment in the Regency / City of Bali Province. Education and the working age population have a negative and significant effect on poverty in the Regency / City of Bali Province. The level of wages has a negative and insignificant effect on poverty in the Regency / City of Bali Province. Educated unemployment has a positive and significant effect on poverty in the Regency / City of Bali Province. The population of working age and the level of wages have an indirect effect on poverty through educated unemployment in the Regency / City of Bali Province.
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