Analysis of Poverty Determinants in The Bali Province 2015-2020

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ABSTRACT
Poverty is a long-term problem in economic development in a country, especially developing countries. This study aims to analyze the effect of economic growth, population, the number of unemployed (TPT), minimum wage, and human development index (IPM) on poverty in Bali Province. The approach used in this research is quantitative with secondary data obtained from the Indonesian Central Bureau of Statistics (BPS) for 2015-2020. The method used to analyze the factors that influence poverty in Bali Province is panel data regression. Based on the results of the study showed that partial economic growth has no effect on poverty. This condition occurs because economic growth in Bali Province has not been inclusive. The minimum wage and the Human Development Index have a negative effect on poverty so an increase in the minimum wage and the HDI will reduce poverty significantly. The number of unemployed and the total population have a positive effect on poverty in the Province of Bali. Simultaneously economic growth, population, number of unemployed (TPT), minimum wage, and human development index (IPM) have a significant effect on poverty in Bali Province.

Keywords: Poverty, Economic Growth, Population, Unemployment, Minimum Wage, Human Development Index.

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INTRODUCTION

The measure of a country's economic success is an increase in economic growth coupled with an even distribution of the welfare of its population. (Todaro, 2012) states that the real issue that becomes a problem in development is humans. This fact puts the main goal of development to be realized to increase the welfare of the population, and reduce inequality and poverty (Dwi & Edy, 2021). The World Bank (2019) states that the main focus of global economic development is ending extreme poverty in an effort to increase shared prosperity. The World Bank report entitled Outcome Document Transforming Our World: The 2030 Agenda For Sustainable Development targets that the main goal of development is to at least halve the proportion of men, women, and children of all ages living in poverty by 2030.

Todaro, (2012) defines poverty as the inability to meet a minimum standard of living, especially in terms of consumption and income. Arsyad (2010) stated that poverty is a multidimensional character in terms of the primary aspects of human life needs such as poverty because of assets, knowledge, skills, and secondary aspects, namely in the form of poor social networks, financial resources, and information which can be described at a macro level by the ability of per capita income. to meet needs. Susanti (2020) defines poverty as a cross-sector problem, cross areas, and cross-generation, while the condition of people trapped in poverty is influenced by backwardness, market imperfections, and lack of capital which causes low productivity in households which has implications for low-income, savings and investment. for household use (Kuncoro, 2013).

Indonesia is the country with the highest population in the world after China, India, and the United States (BPS, 2020). Indonesia's population in 2021 will reach 270.6 million people, with 10.1 percent or 27.54 million people categorized as poor. A large population is certainly an opportunity for Indonesia to become a driving force for the world economy, but it can also be a challenge because it can lead to prolonged economic problems such as poverty and inequality if the population is unable to provide employment. The high rate of population growth but not accompanied by an increase in productivity will have an impact on increasing the supply of food, foreign exchange reserves, and limitations that have an impact on poverty (Kuncoro, 2013). The main priority of national development is reducing poverty, inequality, and injustice by adopting SDG's points, so effective solutions in poverty alleviation require development programs that are tailored to the needs of the poor population of a country and political will (Rejekiningsih, 2011).

Indonesia's poverty alleviation commitment is manifested in the Indonesian National Medium-Term Development Plan (RPJMN) 2020-2024 agenda with a focus on national economic recovery and post-pandemic poverty reduction through various programs and policies launched by the government such as Special Market Operations (OPK), Raskin, Social Safety Network, Direct Cash Assistance (BLT), PNPM Mandiri. Based on data (BPS, 2020) Indonesia has been able to get its population out of extreme poverty from 47.97 million people in 1999 to 24.79 million people in 2019. However, in 2020 the poor population in Indonesia will increase to 27.55 million people because of economic shock as a result of the Covid-19 pandemic hit the world.

Based on (BPS, 2019) it was found that Bali Province is the province with the lowest poverty rate in Indonesia at 3.79% below the national average of 9.22% in 2019. Even though it is included in the lowest category, there are still poverty problems that reduce the welfare of the population and if not addressed will result in...
new poverty. Administratively, Bali Province consists of nine regencies and one city, namely Jembrana, Tabanan, Badung, Gianyar, Klungkung, Bangli, Karangasem, Buleleng, and Denpasar City. The percentage of poor people in Bali Province has continued to decrease from 2015-2020 and is always below the national poverty average. Based on these data it indicates that the poverty alleviation program in Bali is optimally absorbed and on target. The highest poverty is in Karangasem Regency with an average of 6.51% and the lowest is in Badung Regency with an average of 2.04% which indicates that there is still income inequality between residents in the Province of Bali caused by unequal access such as facilities, infrastructure, and fields.

The province of Bali has the lowest poverty rate in Indonesia but still has poverty problems that must be addressed because the number of poor people will continue to increase along with the increase in population. the total population of each in the Province of Bali continues to increase from 4.148 million in 2015 to 4.414 million in 2020. In Irfan & Dell’s research (2020) the population has a positive effect on poverty, while Agustina & Hamzah’s research (2020) states that in the Province Aceh partial population has a negative and significant effect on poverty. However, research by Wiradlyatmika & Sudiana (2020) in Buleleng Regency, population size has no effect on poverty. Todaro (2012) explains that poverty is caused by limited capabilities possessed by a person regarding access to education, health, and employment opportunities. Poverty is a long-term fundamental economic problem, if it is not addressed immediately it will disrupt the balance of other developments. The condition of a household with a low economy has an impact on the birth of poor children or a new generation of poor in the household.

Mukti, (2020) states that poverty is influenced by underdevelopment, market imperfections, and lack of capital which causes low productivity in households which has implications for low income, savings, and investment for household needs so children born in poor households have different choices. limited to developing their optimal potential even in the long term it will disrupt their productivity when they are adults and unable to compete in the world of work so if it is not resolved it will give birth to a new generation of poor and so on. The causes of poverty from an economic standpoint are: a) On a micro basis due to differences in resource ownership between individuals which have an impact on the unequal distribution of income; b) differences in the quality of human resources; c) limited access to facilities and capital (Kuncoro, 2013). One of the efforts to reduce poverty at a macro level is by increasing the economic growth of a region based on its potential sector and opening access to employment opportunities for the population. Bali’s economy is supported by the tourism sector and MSMEs as the main sector, so tourism should be a top priority in increasing the GRDP of the Province of Bali. Islami & Anis, (2019) stated that an increase in GRDP means that people’s productivity is high, and people income is also increasing. Increased income will broaden access to increase both primary and secondary needs, if the income of the population increases, their welfare will also increase and they can get out of the poverty trap.

Based on data (BPS, 2021) Bali’s economic growth rate continues to fluctuate and move in the range of 6% from 2015-2019, but in 2020 it experienced the worst decline of up to -9.31% due to the impact of the co-19 pandemic. The fluctuations in the rate of economic growth for each district/city in Bali Province are not proportional to the percentage of poor people who tend to remain the same. The Kuznets hypothesis states that initially increased economic
growth will actually increase poverty, but at a certain point increased economic growth will reduce poverty. Son Research & IG. W (2018) shows that in some developing countries economic growth has a positive effect on poverty, while Wahyudi & Rejekingsih's research (2013) shows that economic growth has a negative effect on poverty. Jacobus & Walewangko (2021) stated that in North Sulawesi the high rate of economic growth has no effect on poverty.

The high level of poverty is also due to the difficulty in getting jobs which causes unemployment. Sukirno (2013) states that one of the elements that determine the prosperity of a society is the level of income. The percentage of unemployment rate in Bali Province tends to stagnate in the range of 1.3-3 percent. For the first time in 2020, the percentage of the unemployment rate in regencies/cities in Bali Province has experienced a significant increase in the range of 5-7 percent. This significant increase in unemployment is due to the fact that the main occupation of the people in Bali Province is dominated by the tourism sector which has been significantly affected due to the pandemic which has closed many service and trade industries and the high number of layoffs.

The Classical Economic Model states that people's income reaches a maximum point when conditions for the level of full employment can be realized. According to Ningrum (2017) in Indonesia, unemployment and poverty have a positive effect, which means that an increase in the number of unemployed will increase the percentage of poverty. However, research by Megawati & Sebayang (2018) shows that in areas with an industrial base sector in Central Java the number of unemployed has no effect on poverty, and in Usman & Mita's research (2018) in the Riau Archipelago Province the number of unemployed has no effect on poverty. In Diramita & Usman's research (2018) it was found that economic growth has a negative and significant effect on poverty. The same thing was expressed by Nainggolan (2020) in his research which explained that increased economic growth would significantly reduce poverty levels. Case study et al., (2017) population growth rate has a positive effect on poverty in Java, which means that areas with high population density cause intense competition in accessing resources, which can trigger inequality, limited food, and slum areas. According to Sutikno et al. (2019) minimum wages have a positive effect on poverty because the higher the minimum wage in an area, the limited ability of companies to pay for labor, so they switch to more efficient technology, especially unskilled workers. Usman & Tumangkeng's research (2019) in North Sulawesi Province, it shows that the UMK has a negative and significant effect on poverty.

Different facts revealed in the research of Kurniawati et al., (2017) stated that in some areas that are densely industrialized, MSEs do not have a significant effect on poverty, instead, there are factors that have a significant effect, namely the quality of human resources because if the quality of human resources is high, the skills and innovation that humans have can increase their productivity.

According to Wardana & Prijanto (2021) the increase in HDI should be in line with the rapid development of physical and non-physical infrastructure. Based on the Human Capital Sollow-Swan theory that humans are input capital (physical) in the production process, so improving human quality through education will have an impact on mastery of technology and innovation which encourages efficiency in the production process which has the potential to increase productivity (Nainggolan, 2020). The results of Hanurawati's research (2020) in the province of Central Java state that the quality of human resources has a negative
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and significant effect on poverty, while in research. However, Bakar’s research (2019) states that HDI has no significant effect on the poverty rate. Based on this description, it can be seen that the poverty rate in Bali Province during the 2015-2020 period has decreased, but during the Covid-19 pandemic, poverty was quite severe. Therefore, it is necessary to conduct research on the Determinants of Poverty in the Province of Bali in 2015-2020. Formulation of research objectives to determine the determinants that affect poverty in the province of Bali.

METHODOLOGY

In this study, panel data from 34 provinces in Indonesia were used between 2015-2020 which were estimated using the Generalized Method of Moments (GMM). The data used are secondary data which all come from the Central Statistics Agency. The analytical model used in this study is an analytical model that refers to research (Odhuno & Ngui, 2018) which is formulated as follows:

This research is classified as a quantitative type, namely research compiled using a mathematical model, and then developed based on theory to formulate hypotheses related to phenomena or symptoms of poverty in the Province of Bali (Ghozali, 2013). The data used in the secondary data research were obtained from the Central Bureau of Statistics (BPS) of the Province of Bali. The secondary data used is panel data, which is a combination of time series data for the period 2015-2020 and cross-sectional data covering five regencies/cities in the Province of Bali (Badung, Bangli, Buleleng, Gianyar, Jembrana, Karangasem, Klungkung, Tabanan, Denpasar). In this study, it is necessary to standardize the data, namely the transformation of the original data before the calculation stage and panel data regression analysis in order to equate the unit of measurement of variables. Gujarati & Porter (2013) stated that standardized data has a mean value of 0 and a variance of 1, so the estimation of the research variable model will avoid problems of normality (Gujarati & Porter, 2013). Data transformation in this study uses a logarithm, namely by changing the variable district minimum wage (UMK) and population to log form before carrying out the regression.

The analytical method used to analyze the determinants of poverty in Bali Province is panel data regression to estimate and predict the effect value of the independent variables (Economic Growth, Total Unemployed (TPT), Human Development Index (IPM), District Minimum Wage (UMK), and Population) on poverty in districts/cities in the Province of Bali. Panel data regression is needed to analyze the combined cross-sectional data of nine regencies/cities in Bali Province (Badung, Bangli, Buleleng, Gianyar, Jembrana, Karangasem, Klungkung, Tabanan, Denpasar) and time series data for the 2015-2020 period.

\[ K = \beta_0 + \beta_1 PE_{it} + \beta_2 TPT_{it} + \beta_3 UMK_{it} + \beta_4 IPM_{it} + \beta_5 POP_{it} + \epsilon \]

Information: K = Poverty (percent); PE = Economic growth (GRDP ADHK rate in percent); TPT = Number of unemployed (percent); UMK = District Minimum Wage (Million rupiah); HDI = Human Development Index; POP = total population (Soul). In order to test whether or not deviations from the classical assumptions occur in the regression model used, several methods of testing the symptoms of deviations from the classical assumptions are carried out. The normality test was carried out to test whether the residuals of the regression model studied were normally distributed or not. In this study, testing the normality of data using Jarque-Bera and analysis of histogram charts with the following basic
decision making. The data is said to be normally distributed if the results of the Jarque Bera test produce a probability $> \alpha = 5\%$, so that if the conclusion is obtained that the data is normally distributed, the classical assumption requirements for normality can be fulfilled.

The multicollinearity test was carried out to test whether the regression model found a correlation between the independent (independent) variables. Multicollinearity means whether or not there is a correlation or level of linear similarity between the variables of Economic Growth, TPT population, UMK and HDI in a regression model. The way to see the results of multicollinearity detection can be by using the correlation matrix test, if the results are less than 8 it can be interpreted that there is no multicollinearity problem in the prediction model (Gujarati & Porter, 2013).

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one residual observation to another. The heteroscedasticity test in this study was carried out using the Park test. In this study, to test heteroscedasticity, the Glejser test was used. The Glejser test is carried out by looking at the Obs*R-squared value. The data is affected by heteroscedasticity if all independent variables have a value of Obs*R-squared $<\alpha (\alpha = 0.05)$.

The Common Effect model is a model that combines time series and cross-section data by combining the two types of data, so the Ordinal Least Square (OLS) method or least squares technique can be used to estimate the panel data model. This model is used to improve the weaknesses of the common effect analysis model, this is because the common effect method produces an intercept or slope in panel data that does not change between individuals (cross-section) and between time (time series) (Gujarati & Porter, 2013). In this method differences in individual characteristics and time are accommodated with the error of the model. Given that there are two components that contribute to the formation of errors, namely (individual and time), then this method needs to be broken down into errors from individual components, errors for time components, and combined errors (Gujarati & Porter, 2013).

Based on Gujarati & Porter (2013) to test the suitability or goodness of the three methods in the panel data regression model estimation technique, the Chow Test, Hausman Test, and Lagrange Multiplier Test are used. The Chow test is used to test the suitability of the model whether using the common effect or fixed effect method which should be used in panel data modeling. The test was carried out by looking at the comparison of the Chi-square Cross-section probability value with the alpha significance level (5%). If the test produces a probability value of less than 0.05, it means that $H_0$ is rejected, then it means that testing is more appropriate using the Fixed Effect Model (FEM) compared to the Common Effect Model (CEM) (Gujarati & Porter, 2013). This test is used to determine which model specifications are better used whether Fixed Effect Model (FEM) or Random Effect Model (REM) in estimating panel data regression. If the test results in a chi-square value of less than 0.05, it means that rejecting $H_0$ then means that testing is more appropriate using the Fixed Effect Model (FEM) compared to the Random Effect Model (REM) (Gujarati & Porter, 2013). The Lagrange Multiplier (LM) is used to determine the suitability of the Random Effect model or the most appropriate Common Effect model. Estimating the results of the LM test can be done by looking at the comparison of the chi-square value with the alpha significance level (5%). If the test results in a chi-square value of less than 0.05, it means that rejecting $H_0$ then means that
the test is more appropriate to use the Random Effect Model (REM) compared to the Common Effect Model (CEM) (Gujarati & Porter, 2013).

RESULT AND DISCUSSION

The Chow test is used to test the suitability of the model whether using the common effect or fixed effect method which should be used in panel data modeling. The Chow test is used to test the suitability of the model whether using the common effect or fixed effect method which should be used in panel data modeling (Gujarati & Porter, 2013). Based on the probability value of the Hausman Fixed Effect Model (FEM) test is the best model used.

Table 2. Descriptive Statistics

<table>
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<tr>
<th>Variabel</th>
<th>Koefisien</th>
<th>t- Statistic</th>
<th>P-Value</th>
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<tbody>
<tr>
<td>C</td>
<td>-11.46258</td>
<td>-1.171296</td>
<td>0.2484</td>
</tr>
<tr>
<td>PE</td>
<td>-0.017623</td>
<td>-1.137727</td>
<td>0.2620</td>
</tr>
<tr>
<td>POP</td>
<td>13.35535</td>
<td>6.190973</td>
<td>0.0000</td>
</tr>
<tr>
<td>TPT</td>
<td>0.027320</td>
<td>0.630120</td>
<td>0.0322</td>
</tr>
<tr>
<td>UMK</td>
<td>-4.322350</td>
<td>-4.467298</td>
<td>0.0001</td>
</tr>
<tr>
<td>IPM</td>
<td>-0.020081</td>
<td>-0.174030</td>
<td>0.0027</td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td>0.900755</td>
<td>0.00000</td>
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</table>

Based on the regression results, it shows that the variable economic growth has no effect on poverty in Bali Province, namely by showing a significance probability value of 0.2620 that is greater than α (0.05), so that the alternative hypothesis which states that economic growth has a negative effect on poverty is rejected. This is possible because the pattern of economic growth in Bali Province is not yet inclusive, so it is still pseudo-growth and far from the quality of growth (Nugroho, 2021). This finding reinforces the paradoxical phenomenon that high economic growth does not necessarily reduce poverty. Economic growth in the Province of Bali is supported by investment in the tourism industry in which the lower classes of society have less access to factors of production whose aggregation is GRDP. Economic growth has no effect on poverty in Bali Province, this is due to the fact that not all of the poor have benefited from economic growth. Most of the economic growth in Bali Province is dominated by the tourism sector, but the contribution of other sectors such as trade, corporate services, and procurement tends to be smaller. This is supported by research conducted by Nabilawati & Hatahjulu (2021) that economic growth has no effect on reducing poverty levels because the poor are not involved in the process of economic growth.

Based on the test results, it shows that the population variable has a positive and significant effect on poverty in the Province of Bali, namely by showing a
significance probability value of 0.000 which is less than \( \alpha \) (0.05). It can be concluded that the alternative hypothesis which states population has a positive effect on poverty is accepted. The population in the Province of Bali has increased every year so it is important to ensure that the population in the Province of Bali experiences an increase in income. The assumption is when income tends to be the same, but the population increases resulting in poverty. Increased income is related to purchasing power, where when people's income increases, purchasing power increases so that poverty can decrease. According to Malthus' theory, the population tends to increase geometrically, while food production (natural resources) tends to increase arithmetically. As a result, an imbalance between natural resources is unable to meet the needs of the growing population. The development of resources cannot support the development of the population, it will cause poverty. From this explanation it can be seen that the population has a positive and significant influence, that is, when the population increases, the number of poor people increases because it is possible for residents to earn a fixed income, but on the other hand the population continues to increase. The results of this study are in line with the findings of Case et al., (2017) which state that the rate of population growth has a positive effect on poverty.

The regression results show that the variable number of unemployed has a positive and significant effect on poverty in Bali Province. This is indicated by a probability value of 0.0322 which is less than \( \alpha \) (0.05), so it can be concluded that the alternative hypothesis which states that the number of unemployed has a positive effect on poverty is accepted. For the first time in 2020 the percentage of the unemployment rate in regencies/cities in Bali Province has experienced a significant increase in the range of 5-7 percent because except for Bangli and Karangasem Regencies which are not affected because the majority of the population's livelihood is in agriculture. The significant increase in 2020 occurred due to the impact of the lockdown policy during the Covid-19 pandemic which weakened the tourism sector even though the economic structure of the Province of Bali was supported by the agricultural and tourism sectors.

Facts related to the decline in the number of unemployed in the Province of Bali in line with the decline in the number of poverty in the Province of Bali. This indicates that basically the population in the Province of Bali can be well absorbed by employment opportunities. The majority of people in Bali Province are dominated by the agricultural and tourism sectors where in 2020 the number of people working in the tourism sector will reach 760,587 people while in the agricultural sector it will reach 534,550 people.

Based on the research results, the number of unemployed has a positive and significant influence on poverty in Bali Province, namely when the number of unemployed decreases, poverty will also decrease because people who have jobs will earn income which will increase purchasing power. The results of this study are in line with the findings of Sukmaraga (2011) which shows that an increase in unemployment will significantly affect the level of poverty. Based on the regression results, it shows that the minimum wage variable has a negative and significant effect on poverty in the Province of Bali. This is indicated by a probability value of 0.0001 which is smaller than \( \alpha \) (0.05). It can be concluded that the alternative hypothesis which states that district minimum wages have a negative effect on poverty is accepted. The significant influence of the minimum wage on poverty in Bali Province occurs because the majority of the population works in the tourism industry, which in terms of
wage standards is influenced by the minimum wage set by the government. Standardization of the minimum wage provides guarantees for workers to prevent extreme losses. The minimum wage in Bali Province which continues to increase shows that the government continues to be committed to providing wage guarantees for workers which in practice can reduce poverty according to research results.

Based on the research results, the minimum wage has a negative and significant effect on poverty in the province of Bali, namely the minimum wage increases, poverty will decrease because the standardization of the minimum wage provides guarantees and certainty for labor wages. The results of this study are in line with Islami & Anis (2019) which show that the minimum wage has a negative and significant correlation to poverty, meaning that an increase in the minimum wage will reduce the poverty rate. Based on the regression results, it shows that the HDI variable has a negative and significant effect on poverty in the Province of Bali, which is indicated by a probability value of 0.0027 which is smaller than α (0.05). It can be concluded that the alternative hypothesis which states that the human development index has a negative effect on poverty is accepted. The lowest HDIs are Karangasem and Bangli in the range of 60-68 percent.

The human development index shows the amount of investment in human capital. Improvements in the health and education sectors as well as per capita income in the Province of Bali have led to an increase in the quality of human resources which will ultimately increase productivity. The human development index (IPM) in Bali Province ranges from 80-90 and is relatively high when compared to other provinces in Indonesia. The HDI values are spread evenly in each district/city in Bali Province. This causes the HDI to have a significant effect on poverty because the increase in HDI is in line with the decline in poverty in the Province of Bali. Based on the research results, the human development index has a negative and significant impact on poverty in the Province of Bali, namely the development index increases, poverty will decrease due to improvements in human resources that support increased population productivity. The results of this study are in line with Sukmaraga (2011) which shows that there is a significant relationship between the human development index and poverty.

**CONCLUSION**

Poverty in the Province of Bali in the 2014-2020 period was the lowest in Indonesia. Even though it is included in the lowest category, there are still problems of poverty that reduce the welfare of the population and if not addressed will result in new poverty. Based on the research results it can be concluded (1) Economic growth has no effect on poverty in Bali Province, (2) Population has a positive effect on poverty in Bali Province, (3) Unemployment rate has a positive effect on poverty in Bali Province, (4) Minimum wage has a negative effect on poverty in the Province of Bali and (5) the Human Development Index (HDI) has a negative effect on poverty in the Province of Bali.

This study recommends suggestions for the government: (1) Poverty in the Province of Bali can be reduced through a decrease in the number of unemployed so that the government is encouraged to open employment opportunities, especially tourism-based in accordance with the superior potential of the Province of Bali, (2) The number of population increases without being matched by employment good practices can increase poverty so that the government is encouraged to provide skill training and improve the quality of human resources so that residents can work according to their abilities, (3) The minimum wage...
significantly affects the level of poverty in the Province of Bali so that the government is encouraged to continue to improve living wage standards to provide guarantees for workers and (4) The need for continuous efforts to improve the quality of human resources through improving the quality of education and health, for example by providing proper health infrastructure and providing educational services evenly. For further research it is recommended to add other variables that are thought to affect poverty levels.

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