

# The Influence of Demographic Factors Economic Growth in Kediri City

Isro'in Listiyaningrum\*, Muhammad Dian Ruhamak, Budi Heryanto

Faculty of Economics and Business, Kadiri University

\*Corresponding author. Email: listiyaningrum11@gmail.com

## ABSTRACT

This research aims to determine the effect of births, deaths and in-migration on economic growth in Kediri City. This type of research is quantitative using secondary data. The test tools for this research use the classical assumption test, multiple linear regression analysis, coefficient of determination, t test and F test. The results of this research show that the significance value of the influence of X1 on Y is equal to  $0,083 > 0,05$ . The influence of X2 on Y is equal to  $0,049 < 0,05$ . The influence of X3 on Y is equal to  $0,035 < 0,05$ . The simultaneous influence of X1, X2 and X3 on Y is equal to  $0,062 > 0,05$ . Death has a positive and significant effect on economic growth in Kediri City. Incoming migration has a positive and significant effect on economic growth in Kediri City. Likewise, research results show that births, deaths and in-migration have a positive and insignificant effect on economic growth in Kediri City.

**Keywords:** Births, Deaths, Migration, Economic Growth.

## 1. INTRODUCTION

The welfare of the Indonesian people can be realized by the country's economy continuing to develop and run effectively. Development carried out in the regions will be the main strategy in achieving targeted and efficient economic development goals with impacts that can be felt directly through increasing the production of goods and services to increase regional economic growth. One of the indicators of regional development success is economic growth from year to year which can be seen in the GRDP value (Dewandaru et al., 2022). Economic growth is the development of economic activities which results in an increase in goods and services produced by society, this will later influence the increase in society's welfare.

Economic growth is an increase in national income from one period to the next. Many factors influence economic growth, including the increase in goods and services seen from increased production of industrial goods, development of infrastructure, increasing and leveling education as well as development of production of capital goods and the service sector. Apart from these economic activities, demographic factors also influence economic growth. As in Adam Smith's view, humans are the main production factor, because nature (land) has no meaning if there are no human resources who are good at processing it so that it is beneficial for life (Novrantyo, 2016).

Demography is the study of human populations which can be seen through births, deaths and population movements. Not only that, demography also involves population aspects which consist of population numbers, population distribution and also population growth which can change over time.

Based on data from the Kediri City Central Statistics Agency, economic growth in Kediri City in the 2019-2023 period tends to increase. The highest growth was in 2019 with a GDP value of >90 billion, and the lowest growth was in 2020 with a GDP value of >84 billion. However, in the following year the economic growth of Kediri City experienced an increase again. Meanwhile, the highest population growth rate in Kediri City was in 2021 with growth of 0.90 percent. Meanwhile, the lowest population growth rate will occur in 2022 at 0.46 percent. The population growth rate of Kediri City can be seen that every year the growth rate goes up and down.

Based on the demographic factors described above, it is clear that economic growth may be influenced by birth rates, death rates and population migration. Based on the description that has been presented, the author is interested in conducting research with the title "The Influence of Demographic Factors on Economic Growth in Kediri City".

## **2. PROBLEM FORMULATION**

1. Does birth have an effect on economic growth in Kediri City?
2. Does death affect economic growth in Kediri City?
3. Does incoming migration have an effect on economic growth in Kediri City?
4. Do births, deaths and in-migration influence economic growth in Kediri City?

## **3. LITERATURE REVIEW**

### ***3.1. Economic Growth***

Economic growth is the development of activities in the economic sector which causes goods and services produced by society to increase. Economic growth is determined by the actual increase in goods and services produced in economic activities (Armah, 2019). Economic growth in the regional sector is measured by growth in Gross Regional Domestic Income (GRDP) at constant prices. The GRDP growth rate will provide a process of increasing per capita output in the long term (Novrantyo, 2016).

### ***3.2. Demographics***

Demography is a science that studies changes in population order by utilizing population data and statistics, as well as mathematical and statistical calculations from population data, especially regarding changes in number, distribution and composition/structure. These changes occurred due to the influence of changes in the main components of population growth, namely fertility, mortality and migration which in turn caused changes in the number, structure and distribution of the population (Athifah, 2018).

### ***3.3. Fertility or birth***

Fertility is the actual productive capacity of a population or the number of live births a person or group of women have. The term fertility is the same as live birth, namely the release of a baby from a woman's womb with signs of life: for example screaming, breathing, heartbeat, and so on. A woman's physiological ability to give birth or participate in reproduction is known as fecundity (Bidarti, 2020).

### ***3.4. Mortality or death***

The World Health Organization (WHO) defines death as an event of permanent disappearance of all signs of life, which can occur at any time after a live birth (Ilpaj & Nurwati, 2020).

### ***3.5. Migration or transfer***

Migration is a permanent or semi-permanent change of residence (Tjiptoherijanto, 1999). In this understanding, there are no restrictions on the distance of movement or its nature, and there is no distinction between domestic migration and foreign migration (Lee Everett, 2000).

## **4. HYPOTHESIS**

H1: Birth has a significant effect on economic growth in Kediri City.

H2: Death has a significant effect on economic growth in Kediri City.

H3: Incoming migration has a significant effect on economic growth in Kediri City

H4: Births, deaths and in-migration have a significant effect on economic growth in Kediri City.

## **5. METHOD**

This research is quantitative research where the research data used is in the form of numbers and analysis uses statistics. The data used in this research are time series over a period of the last five years or from 2019 to 2023. The data used in this research is secondary data, namely data that the researcher did not attempt to collect himself, for example taken from the Central Statistics Agency, company documents or organizations, newspapers and magazines, or other publications.

This research uses multiple linear regression analysis methods. Multiple linear regression testing can be carried out after the model from this research meets the requirements, namely passing the classical assumption test, namely the normality test, multicollinearity test, autocorrelation test and heteroscedasticity test. Meanwhile, for hypothesis testing, it is measured from the coefficient of determination value with a coefficient of determination value between zero and one. R value small means that the ability of the independent variables to explain variations in the dependent variable is very limited. A value close to one means that the independent variables provide almost all the information needed to predict variations in the dependent variable. The F statistical value is by comparing the calculated F value with the F table, if  $F_{table} > F_{calculated}$ , then  $H_0$  is rejected. If  $F_{table} < F_{count}$ , then  $H_0$  is accepted. Or by using the significance probability number, if the significance probability is  $> 0.05$ , then  $H_0$  is rejected. And if the significance probability is  $< 0.05$ , then  $H_0$  is accepted. And testing the t statistical value with decision making criteria, if the significance is  $< 0.05$ , then  $H_0$  is accepted, meaning there is a significant influence of the independent variable individually on the dependent variable. If significance is  $> 0.05$  then  $H_0$  is rejected, meaning there is no significant influence of the independent variables individually on the dependent variable.

## 6. RESULTS

### 6.1. Classic assumption test

#### 6.1.1. Normality test

Based on the test results using Kolmogrov-Smirnov, it can be concluded that the normality test for this research was 0.200, greater than 0.05. This proves that the data from all variables have a normal distribution.

#### 6.1.2. Multicollinearity Test

Based on the results of the multicollinearity test, it can be seen that the tolerance value for births, deaths and incoming migration is  $0.657 > 0.10$  and the VIF value is  $1.523 < 10$ , so it can be concluded that there is no multicollinearity in this model.

#### 6.1.3. Heteroscedasticity Test

Based on the test results that all variables have a probability value using the Glejser test  $> 0.05$ , the birth variable has a result of  $0.598 > 0.05$ , likewise the death variable has a result of  $0.220 > 0.05$ , and the incoming migration variable has a result of  $0.247 > 0, 05$ . This means that there are no symptoms of heteroscedasticity in the regression model.

#### 6.1.4. Autocorrelation Test

Based on the results of the autocorrelation test using the run test, it is known that Asymp.sig (2 – tailed) is 1.000, which is greater than 0.05, so it can be concluded that there are no symptoms of autocorrelation.

### 6.2. Multiple Linear Regression Analysis

$$Y = 70276,892 + 0.756X_1 + 38,287X_2 + 2,049X_3 + e$$

Where this equation can be explained as follows:

1. The constant 70276.892 shows that the variable1, X2 and X3 this will increase variable Y by 70276.892.
2. The birth coefficient value of 0.756 indicates that birth (X1) increases by 1%, economic growth (Y) will increase by 0.756% and vice versa, if prices decrease by 1% then economic growth will decrease by 0.756%.

3. The death coefficient value of 38.287 indicates that death (X2) increases by 1%, economic growth (Y) will increase by 38.287% and vice versa, if deaths decrease by 1% then economic growth will decrease by 38.287%.
4. The in-migration coefficient value of 2.049 indicates that death (X3) increases by 1%, economic growth (Y) will increase by 2.049% and vice versa, if deaths decrease by 1% then economic growth will decrease by 2.049%.

### **6.3. Hypothesis testing**

#### **6.3.1. T Test (Partial)**

Based on the partial test of the birth variable, a significance value of  $0.083 > 0.05$  was obtained. So it can be concluded that H1 birth influence on economic growth in Kediri City is rejected. Based on the partial test of the death variable, a significance value of  $0.049 < 0.05$  was obtained. So it can be concluded that H2 Death has an influence on economic growth in Kediri City. Based on the partial test of the incoming migration variable, a significance value of  $0.035 < 0.05$  was obtained. So it can be concluded that H3 Incoming migration has an influence on economic growth in Kediri City.

#### **6.3.2. F Test (Simultaneous)**

Based on the simultaneous test, it is known that the test results obtained a significance value of  $0.062 > 0.05$ . So it can be concluded that simultaneously H4 which states X1, X2 and X3 influence on Y is rejected.

#### **6.3.3. Determinant Coefficient (R2)**

Based on the test results, it shows that the coefficient of determination (R2) of 0.999. This means that 99.9% of the dependent variable in the form of economic growth in Kediri City can be influenced by birth, death and in-migration variables, while the remaining 0.1% is influenced by other variables not examined in this research.

## **7. DISCUSSION**

Birth has a positive and insignificant influence on economic growth in Kediri City. This is supported by the results of the t test, which shows that the significance value for the birth variable is  $0.083 > 0.05$ . So it can be concluded that H1 which stated that births had an influence on economic growth in Kediri City was rejected. This research is in line with previous research conducted by (Novrantyo, 2016) which states that births have an insignificant effect on economic growth.

Death has a positive and significant effect on economic growth in Kediri City. This is supported by the results of the t test which shows that the significant value is  $0.049 < 0.05$ . So it can be concluded that H2 which states that death has an effect on economic growth in Kediri City is accepted. This finding is in line with research conducted by (Novrantyo, 2016) which shows that the mortality variable seen from the infant mortality rate partially has a significant effect on economic growth.

Incoming migration has a positive and significant effect on economic growth in Kediri City. This is supported by the results of the t test which shows that the significant value is  $0.035 < 0.05$ . So it can be concluded that H3 which states that incoming migration has an influence on economic growth in the City of Kediri is accepted. This finding is in line with research conducted by (Susanti et al., 2015) which shows that the incoming migration variable partially has a significant effect on economic growth.

Births, deaths and in-migration have a positive and insignificant effect on economic growth in Kediri City. The results of the F test show that the significant value is  $0.062 > 0.05$  so it can be concluded that births, deaths and in-migration have an insignificant influence on economic growth in Kediri City. Which means H4 which states that births, deaths and migration influence economic growth in the city of Kediri is rejected.

## **8. CONCLUSION**

- a. Based on the test results, it was found that births had a positive and insignificant influence on economic growth in Kediri City.

- b. Based on the test results, it was found that death had a positive and significant effect on economic growth in Kediri City.
- c. Based on the test results, it was found that incoming migration had a positive and significant effect on economic growth in Kediri City.
- d. Based on the test results, it was found that births, deaths and in-migration had a positive and insignificant effect on economic growth in Kediri City.

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