



ANALYSIS OF THE INFLUENCE OF DEMOGRAPHIC DIVIDEND ON LABOR ABSORPTION IN GORONTALO PROVINCE

Dandy H Daimalindu¹

S1 Economic Development Study Program , Faculty of Economics, State University of Gorontalo
dandidaimalindu7810@gmail.com

Syarwani Canon²

S1 Economic Development Study Program , Faculty of Economics, State University of Gorontalo
syarwanicanon@ung.ac.id

Sry Indriyani S. Dai³

S1 Economic Development Study Program , Faculty of Economics, State University of Gorontalo
Sriindriyani_dai@ung.ac.id

Article history:	Abstract:
Received: 24 th June 2023 Accepted: 24 th July 2023 Published: 28 th August 2023	<p>This research aims to find out the influence of total population, working-age Population, and dependency ratio on labor absorption in Gorontalo province. The Research employs a quantitative approach to reflect and analyze the problem in the form of figures starting from conducting interpretation to obtaining the result. The quantitative data are required to draw conclusions from the research results and are intended to figure out the influence between the two or more variables. The research analysis uses panel data regression which is a combination of time series with cross section data</p> <p>Findings reveal that the total population exerts a positive and insignificant influence. This signifies that an increase in the total population is unable to clearly describe the increase in labor absorption in regencies/city in Gorontalo Province during the 2011-2020 periods. The working-age population has a negative and significant influence on labor absorption. This means that an increase in the working-age population will decrease the absorption of labor in regencies/city in Gorontalo Province during the 2011-2020 periods. The dependency ratio also has a negative and significant influence on labor absorption this shows that an increase in the dependency ratio will decrease the labor absorption in regencies/city in Gorontalo Province during the 2011-2020 periods.</p>

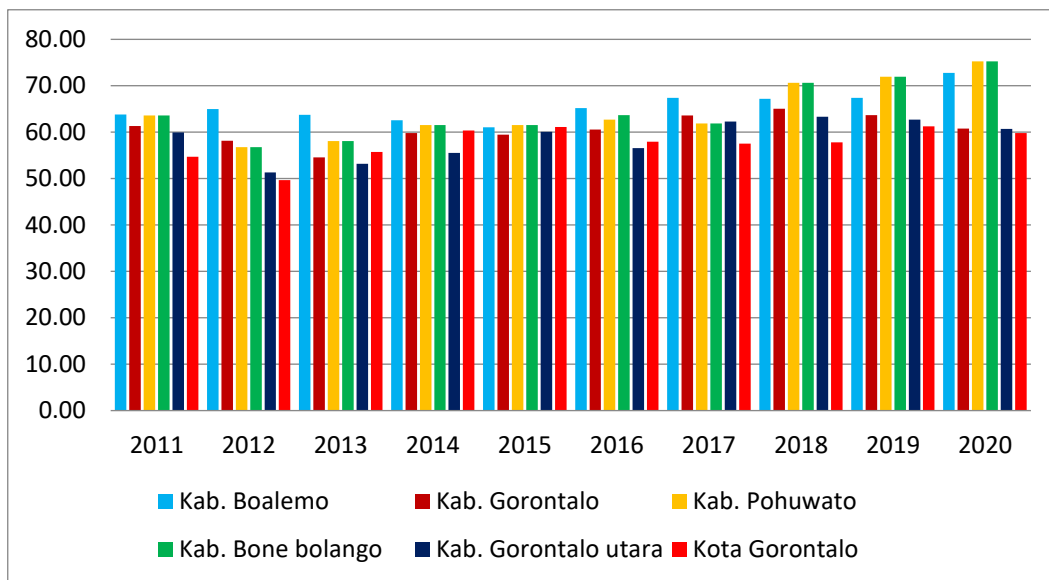
Keywords: Labor, Total population, Working-Age Population, Dependency Ratio

1. INTRODUCTION

Population is one of the factors forming the establishment of a country, without a population, a territorial area will not stand firmly as a country. Basically, the existence of a population in a country will support the progress of a country on the condition that the population must have a good standard of living. The more the population in a country, the faster the opportunity to accelerate the development of the country. However, if high population growth is not supported by good abilities and skills, this situation will bring big problems in a country. (Ancient, 2016)

Population growth is an opportunity that can be used to absorb labor. Absorption of labor can be seen as one of the factors supporting development due to population growth, meaning that population growth is an opportunity to absorb labor which can increase production and will expand production.

Expansion of labor absorption is needed to keep pace with the rate of young people entering the labor market. The imbalance between the growth of the labor force and the absorption of labor will lead to high unemployment. The increase in unemployment will result in a waste of resources and the potential of the workforce. This is a major source of poverty and encourages an increase in social unrest, and hinders economic development in the long term (Zakiati, 2016).

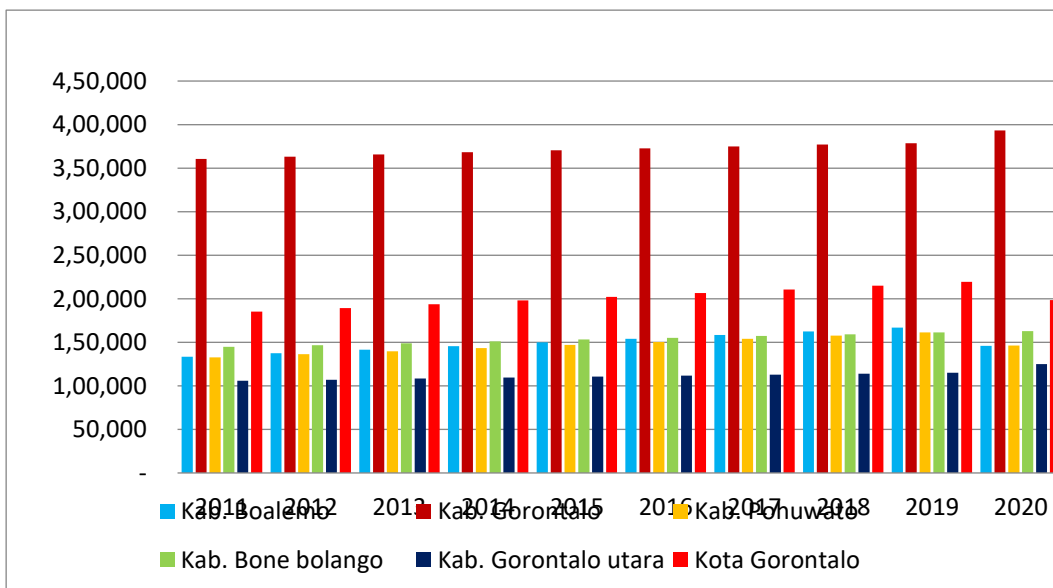


Sumber : BPS Provinsi Gorontalo 2021, diolah

Gambar 1.1 Gorontalo Province labor absorption

Based on Figure 1.1 Labor Absorption in the district/city of Gorontalo Province, it shows that the absorption of labor from 2011 to 2020 has increased even though in several years there has been a decline in several districts, such as Boalemo district in 2011 at 63.79% then decreased to in 2015 which was 61.05%, but in 2016 to 2020 it continued to increase to 72.77%. Likewise in several other districts. However, the data shows that labor absorption in the province of Gorontalo should be utilized as well as possible because labor absorption is believed to provide a large enough contribution to the economy.

According to Rochaida (2016), conceptually, population is a dynamic balance between increasing and decreasing both fertility and mortality as well as in-migration and out-migration within a region. A large population increase is a positive thing because with a large population it can be used as a subject for development and has an effect on economic output. High economic output can be obtained from the production of goods and services carried out by the population, the more population, the region will be able to produce more goods and services, which means it can also consume more goods and services.

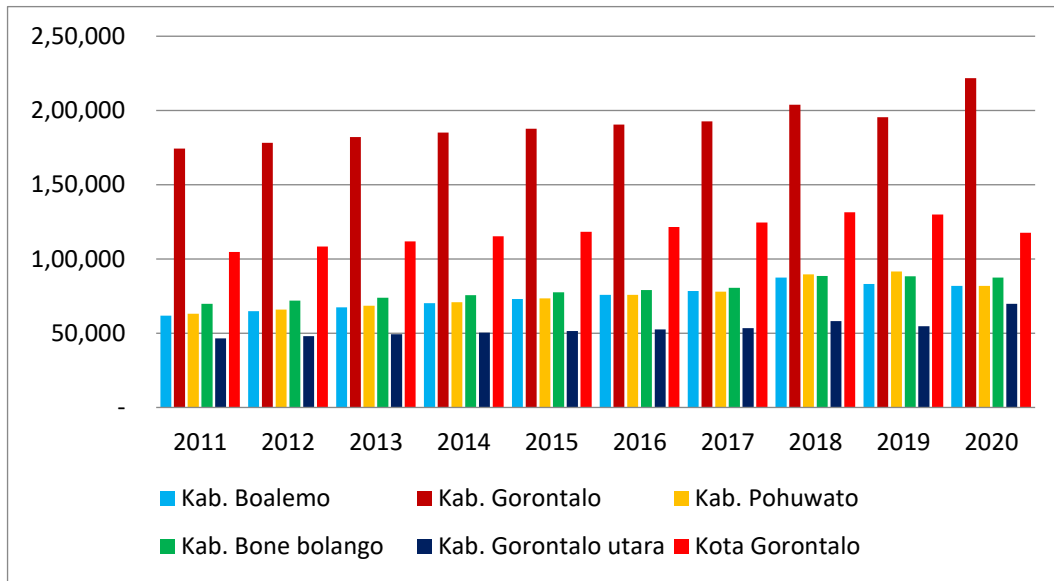


Sumber : BPS Provinsi Gorontalo 2021, diolah

Gambar 1.2 Population of Gorontalo province

Based on data on the population of the province of Gorontalo in 2011-2020, it shows that every year there is an increase in the population in the province of Gorontalo, both in terms of fertility rates and in-migration. The highest population is concentrated in the Gorontalo district, which until 2020 reached 393,107 people or 33.55%, and the lowest population was in North Gorontalo district, which was 124,957 people or 12.20% in 2020 of the total population of Gorontalo province. The demographic bonus can be seen with the dependency ratio, the dependency ratio can be used as an indicator that can roughly show the economic condition of a country whether it is classified as a developed country or a developing country. The dependency ratio is also an important demographic indicator. The higher the percentage of the dependency

ratio shows the higher the burden that must be borne by the productive population to finance the lives of the unproductive and unproductive population

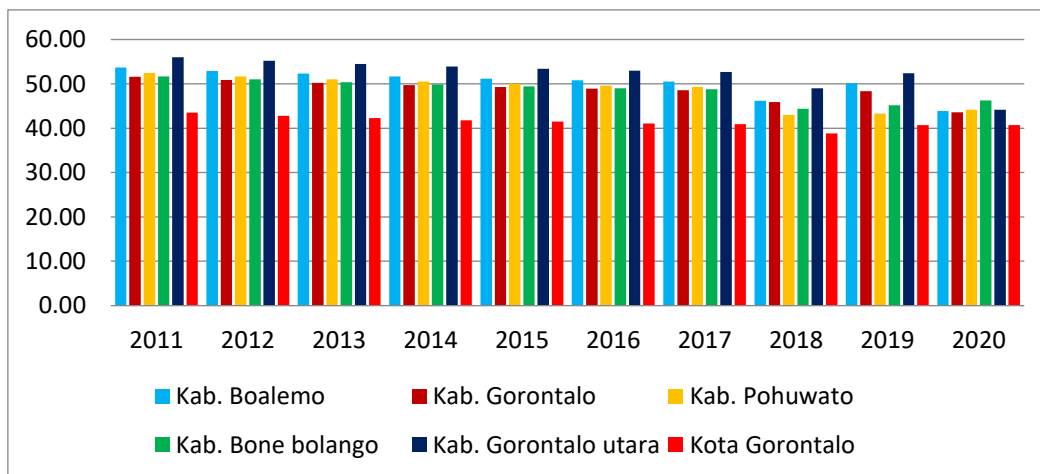


Sumber : BPS Provinsi Gorontalo 2021, diolah

Gambar 1.3
Number of productive age population of Gorontalo province

Based on data on the number of productive age population of Gorontalo province in 2011-2020 shows that every year there is an increase in the productive age population. The highest number of productive age population is concentrated in the Gorontalo Regency area which until 2020 reached 221,870 people, or 56.44 percent of the total population in Gorontalo Regency. years, compared to non-productive ages 0-14 and 65 years and over. this condition is a good sign for maximizing a large number of workers in achieving prosperity and prosperity.

The condition of the productive age population that is greater than the non-productive will decrease the dependency ratio. The parameter used in assessing this phenomenon is the Dependency Ratio, which is a ratio that describes the ratio between the number of productive and non-productive population. A low dependency ratio will have an impact on the economy. a country that can be used as an opportunity to increase the productivity of a country.



Sumber : BPS Provinsi Gorontalo 2021, diolah

Gambar 1.4
Dependency ratio of Gorontalo province

Based on Figure 1.4 the dependency ratio above shows that the dependency ratio in the district/city of Gorontalo province has decreased every year, the dependency ratio in 2020 in the district/city of Gorontalo province is at 48-40 percent. from year to year has increased, while the number of people of non-productive age has decreased from year to year. Currently, Gorontalo Province is experiencing a demographic bonus where the number of working age (productive age) is very large to bear the smaller non-labor force age, which is indicated by the dependency ratio which is increasingly reaching 44 percent. The demographic bonus in Gorontalo Province is an opportunity that must be utilized, especially since Gorontalo

Province is predicted to reach the peak of the lowest demographic bonus (Windows of Opportunity) in Sulawesi, which reached 44 percent. In the demographic bonus, Gorontalo Province must really utilize human resources because it is known that Gorontalo's natural resources are not as rich as other provinces in Indonesia. The occurrence of a demographic bonus in the province of Gorontalo has an impact on the availability of an abundant workforce, so the authors choose the title "Analysis of the Effect of the Demographic Bonus on the Absorption of Apes in the Province of Gorontalo" because based on BPS data it shows that the province of Gorontalo is included in the demographic bonus area, based on the author's knowledge, has never there is research on the effect of the demographic bonus on labor absorption in the province of Gorontalo. 1.How is the influence of population on labor absorption in Gorontalo Province?2. How does the population of productive age affect labor absorption in Gorontalo Province? 3. How does the Dependency Ratio affect labor absorption in Gorontalo Province?

2. MATERIALS AND METHODS

2.1 Theory Study

Labor is a population who is able to carry out work activities to produce goods and services. In Law No. 13 of 2003 Chapter 1 article 1 paragraph 2 explains that workers are those who can work to produce goods or services, either to meet their own needs or for the community. In employment, there are two groups consisting of groups of workers and groups of non-labor. Those who are included in the workforce are those who are of working age, and those who are not included in the workforce are those who are not yet of working age.

2.1.1.2 Labor Absorption

According to Haryo (2002) labor absorption is the number of jobs that have been filled which is reflected in the large number of working people. The working population is absorbed and scattered in various sectors of the economy. The absorption of the working population is caused by the demand for labor in the economic business field. Indonesia with a large population means it has large resources as well.

2.1.1.3 Demand and Supply of Labor

The demand for labor is highly dependent on economic conditions. When the economy is in good condition, the demand for labor will be higher, while when the economy is sluggish, the demand for labor will decrease and the labor market will also be sluggish. When the demand for labor is high, the unemployment rate will be low, otherwise if the demand is low, the unemployment rate will increase. Theoretically, in developing countries, when economic growth increases, the demand for labor or people's participation in development will also increase. Thus, the factors that can increase the demand for labor are economic growth or the number of people working depending on the amount of demand or demand from the community where the demand is influenced by economic activity and also the level of wages.

Based on the theory above, the absorption of labor can be formulated as follows :

$$\text{Share} = \frac{PTK_{ij}}{JPTK_{ij}}$$

Description :

PTK = number of workes 15 years and over

JPTK = population 15 years and over

i = year

j = primary, secondary, tertiary sectors

2.1.2 Demographic Bonus

Demographic bonus is the opportunity for economic prosperity of a country because of the large proportion of the productive population, namely from the age of 15-64 years in population evolution with a cyclical pattern of once a century. If this opportunity is not utilized as much as possible, it will become an anti-bonus, namely a demographic bomb storm. Indonesia is heading towards a demographic bonus stage with increasing economic growth and a long-term decline in the birth rate. Moreover, it is balanced with the transition rate of population growth in the low group, namely the condition of a high mortality rate to a low population growth with a low mortality rate (Sugiharto, 2015).

2.1.3 Population

Residents are all people who are domiciled in the geographical area of an area in this case the Republic of Indonesia for a period of 6 months or more and or those who are domiciled for less than 6 months but aim to settle in that area. According to Thomas Robert Maltbus (in Ganie, 2017) suggests that if the population increases in accordance with the growth of production resources and natural resources, but in fact the quality and quantity of natural resources that can be used by humans tends to decrease and the number of people continues to increase (Ganie, 2017). 2017).

The development and trend of increasing the population is positive, moreover, a large number of people are entering the productive age, even reaching approximately 66 percent of the total population. According to (Ramdani, 2013) the potential for productive population growth can be an engine of sustainable economic growth for the country. But it can also be a negative impact with the phenomenon of conflict between communities in the future.

2.1.5 Dependency Ratio

The dependency ratio is the ratio between the population of productive age (15-64 years) and non-productive (outside 15-64 years old) multiplied by one hundred. The dependency rate describes how many people of non-productive age whose lives must be borne by the productive age group. If the dependency rate continues to decline, this is due to the increasing population of productive age (Umar, 2017).

The formula used in calculating the dependency ratio is :

$$\frac{\text{Penduduk 0-14 tahun} + \text{Penduduk 65+}}{\text{Penduduk 15-64 tahun}} \times 100 \dots \dots \dots (1)$$

RESULTS AND DISCUSSIO

4.2.1 Determination of Panel Data Analysis Model

Models common effect model, the fixed effect model, and the random effect model—are included in the panel data specification. The Chow and Hausman tests, among others, must be passed in order to choose the optimal model that may be employed in this study. Contrasting the -value and the degree of significance employed in this investigation is how the testing stages of the study are conducted. The following testing phases are used to choose the best model.

Tabel 4.1 Penentuan Model Analisi Data Panel

Pengujian	Hasil	Keputusan	Dasar Pangambilan Keputusan
Uji Chow	ρ -Cross section F=0.0000***	Model FEM	Hal ini dikarenakan ρ -Cross section F < Level Signifikansi
Uji Hausman	ρ -Cross section Random=0.0000***	Model FEM	Hal ini dikarenakan ρ -Cross section Random < Level Signifikansi

Catatan: Level Signifikan = (***) 1%, **) 5%, (***) 10% dan TS= Tidak Signifikan
 Sumber: Pengolahan Data, 2022 (Lampiran)

The results above explain that the Fixed Effect model is used in estimating multiple linear regression equations. This is shown by the 2 stages of testing that have been carried out with each test having a Probability value (p) of 0.0000 less than the 1 percent Significance Level. So that the decision formed is the Fixed Effect Model.

4.2.2 Calculation of Fixed Effect Model

According this paradigm, intercept differences can meet object differences. This method uses a dummy variable (dummy) as an independent variable in a regression analysis. The following are the findings of panel data regression using the fixed effect equation model:

Tabel 4.2 Output Perhitungan Model Fixed Effect

Dependent Variable: STK
 Method: Pooled EGLS (Cross-section SUR)
 Sample: 2011 2020
 Included observations: 10
 Cross-sections included: 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	105.9855	10.92551	9.700736	0.0000***
JP	9.13E-05	5.96E-05	1.531712	0.1318 ^{NS}
PUP	-0.000127	6.95E-05	-1.829506	0.0732*
RK	-1.010394	0.174209	-5.799909	0.0000***
Weighted Statistics				
R-squared	0.662880	Mean dependent var	20.35731	
Adjusted R-squared	0.609998	S.D. dependent var	14.11443	
S.E. of regression	1.040567	Sum squared resid	55.22177	
F-statistic	12.53516	Durbin-Watson stat	1.966440	
Prob(F-statistic)	0.000000***			

Catatan: Level Signifikan = (***) 1%, **) 5%, (***) 10% dan TS= Tidak Signifikan
 Sumber: Pengolahan Data, 2022 (Lampiran)

Description :

- C = Konstansta
- JP = Total population
- PUP = Productive age population
- RK = Dependency ratio

Then the equation formed in the empirical results above is:

$$STK_{it} = 105.9855 + 9.13 JP_{it} - 0.000127PUP_{it} - 1.010394RK_{it} + \epsilon_{it}$$

Based on the above equation, the interpretation of the estimation results can be explained as follows:

1. Constant (C) = 105.9855. This means that the absorption of labor without being influenced by independent variables (total population, productive age population and dependency ratio) is 105.9855 people.
2. Total Population (JP) = 9.13. it means that with every increase in population (JP) by 1 person, it will increase labor absorption (STK) by 9.13 people.

3. Productive Age Population (PUP) = -0.000127. This means that with every increase in the Productive Age Population (PUP) by 1 person, it will reduce the Labor Absorption (STK) by 0.000127 people
4. Dependency Ratio (RK) = - 1.010394. This means that with every increase in the dependency ratio of 1 percent, the absorption of labor by 1,010394 people will decrease

The area that has an increase above the average is made up of 4 districts, as can be seen from the value of the fixed impact cross section. One city and one district are among the regions with coefficients below the average. The following is included in the fixed effect cross section table:

Tabel 4.3 Cross Section Fixed Effect

Fixed Effects (Cross) Diatas Rata-Rata	
_KAB_BOAELMO—C	6.285867
_KAB_POHUWATO—C	3.655393
_KAB_BONBOL—C	3.629684
_KAB_GORUT—C	2.112618
Fixed Effects (Cross) Dibawah Rata-Rata	
_KOTA_GORONTALO—C	-9.922472
_KAB_GORONTALO—C	-5.76109

Sumber: Pengolahan Data, 2022 (Lampiran)

According to the table above, Boalemo Regency, with a value of 6.285867, is followed by Pohuwato Regency, with a value of 3.655393, Bone Bolango Regency, with a value of 3.629684, and North Gorontalo Regency. Gorontalo City, with a rating of -9.922472, and Gorontalo Regency, with a value of -5.76109, are places that fall below the average.

1.1.3 Population to Labor Absorption

It is well known that there is a positive but insignificant link between population results and labor absorption. This suggests that any population growth cannot satisfactorily account for the rise in Regency/City labor absorption in Gorontalo Province between 2011 and 2020.

Population has a crucial role in the workforce's integration into a position. Residents participate in the economy in two different ways: as consumers and producers.

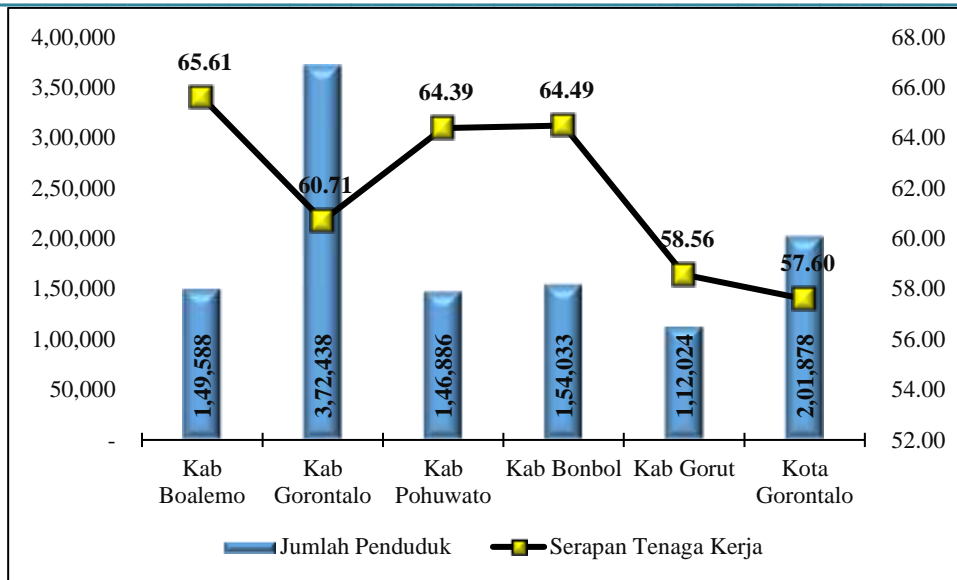
A significant population expansion is a potential or capital for regional economic development, according to Ganie (2017), because it supplies enough labor to raise the value of area production. A growing population will result in higher salaries and higher production costs, according to Malthus' well-known thesis, The Principle of how the population impacts the future improvement of society. Along with the rise in worker income, Effective Demand will also rise (Suhandi, 2018).

Harord-Domar explains about the theory of production, adding labor can increase the amount of production of goods and services in an area (Sopian, 2021). The demand for labor is influenced by the demand for goods and services, if the demand for goods and services increases, the demand for labor will also increase.

Adam Smith explained that an increase in population can expand the market based on this market expansion which will further diversify the needs of the community followed by many investors setting up companies in an area. After the company is established, the company needs to carry out production activities, therefore the demand for labor will increase (Azulaidin, 2021).

The increase in population has not been able to clearly explain the increase in labor absorption, namely because each region has a relatively different population. The characteristics of the population needed to meet the demand for labor in an area tend to be different. There are no jobs available in accordance with the expertise and sector specialization possessed by people who are ready to work.

From 2011 to 2020, the average working population in the Gorontalo province was in the range of 65 percent of the total population aged 15 or older, reflecting an annual growth in the number of persons classified as ready to work.



Sumber: BPS, 2022 (diolah)

Gambar 4.3 Average population and labor absorption in Gorontalo province 2011-2020

The picture above describes the average number of residents absorbed by their workforce in each Regency/City in Gorontalo Province during 2011-2020. If translated by Regency/City, it can be seen that 1) Boalemo has a population of 149,588 people while the absorption of labor is 65.61%, 2) Gorontalo Regency has a population of 372,438 people and an absorption of 60.71% labor force, 3) Pohuwato has a population of 146,886 people and an absorption of workers employment of 64.39%, 4) Bonebolango district with a population of 154,033 people and employment of 64.49%, 5) Gorut with a population of 112,024 and employment of 58.56% 6) City of Gorontalo with a population of 201,878 people and absorption of labor by 57.60%.

The results of this study are in line with research conducted by Izzah (2021) where research explains that the population and everything related to increasing the number of workers is traditionally seen as a positive factor in optimizing production factors. This means that the greater the number of workers, the greater the stock of labor and the greater the population, the greater the potential for the labor market, the greater the demand for labor.

4.3.2 Population of Productive Age Against Labor Absorption

The productive age population has a negative and significant correlation with labor absorption. This means that if the productive age population increases, it will reduce labor absorption for districts/cities in Gorontalo Province during the 2011-2020 period. The productive age population in this study ranged from the population aged 15 to 64 years.

In terms of education, the level of education has not been able to clearly explain the acceptance of someone with higher education in the world of work. Someone who has criticized the world of education will not necessarily be accepted in the world of work because even though someone has a diploma, it does not necessarily mean he has the knowledge, skills and abilities. In addition, there is a mismatch between the education majors you have and the jobs experienced as one of the factors. While people who do not have a diploma can be accepted in the world of work because they have soft skills, but can be rejected in some labor markets because they do not meet the technical requirements.

In addition to education, the factors that influence unemployment are job opportunities. When human resources are ready and have the ability or skill that is qualified but not matched by employment, it will clearly contribute to the unemployment rate. This indicates that the productive age population has a negative correlation with labor absorption. Unemployment manifests itself in the supply and demand of a complex labor market.

4.3.3 Ratio of Dependence to Labor Absorption

The dependency ratio has a negative and significant correlation with labor absorption. This means that when the dependency ratio increases, labor absorption decreases for districts/cities in Gorontalo Province during the 2011-2020 period. The results of this study are in line with Nugreeni's (2021) research that the higher the ratio of the population's dependents, the greater the burden on the region. With the increase in regional burdens, consumption needs increase relative to investment needs, while more consumption indirectly results in a decrease in investment. Meanwhile, according to Widyapangesti (2022), investment has a positive effect on labor absorption.

The higher the dependent ratio, namely the working age population is more burdened than the non-working age population. Dividend demographics (Demographic Bonus) can be claimed that the productive age dominates compared to the unproductive age. The relationship between the dependency ratio and labor absorption in the Regency/City of Gorontalo Province is negative

3. CONCLUSION

The researchers present the following conclusions based on the findings of the research and discussion:

1. The effect of the demographic is favorable and not very significant. which implies. The rise in labor absorption in Gorontalo Province's Regencies/Cities between 2011 and 2020 cannot be definitely attributed to population growth.

2. The population in the productive age significantly and negatively affects labor absorption. which implies. In Gorontalo Province, districts and cities will absorb less labor between 2011 and 2020 if the population of productive age grows.
3. The dependency ratio significantly negative affects labor absorption. which suggests. For the Gorontalo Province's regencies and cities between 2011 and 2020, labor absorption falls as the dependence ratio rises.

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