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Determinants of Job Opportunities in Yogyakarta Special Regional Province

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ABSTRACT

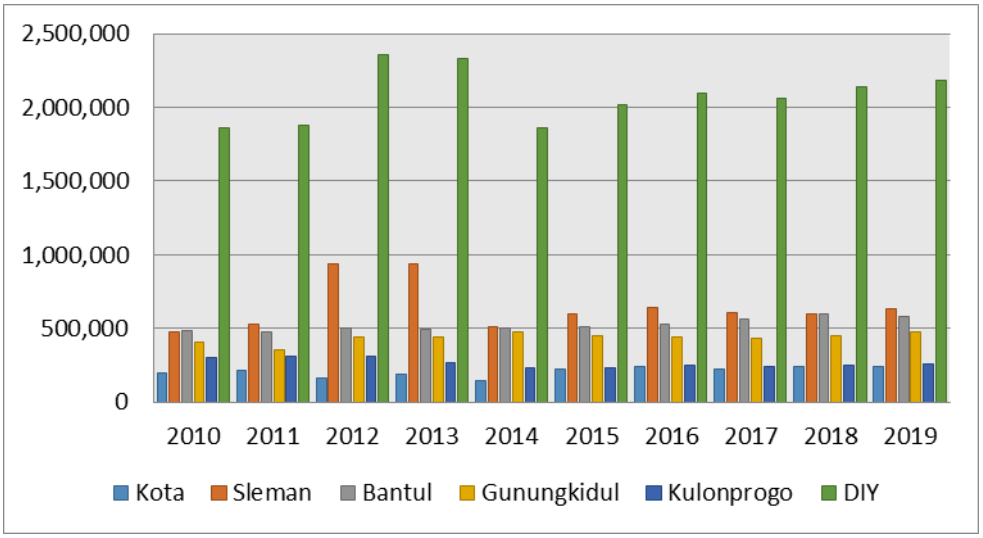
The Republic of Indonesia has a goal to create a just and prosperous society as stated in the 1945 Law. To achieve this goal, it is necessary to carry out development activities. One of the unresolved development problems is employment. Therefore, the purpose of this study was to determine the effect of the minimum wage, education level, industry, Gross Regional Domestic Product (GDP) and government spending on employment opportunities in the Special Region of Yogyakarta. The data used is annual data from 2010–2019 and uses the Random Effect Model approach with the Generalized Least Square (GLS) method. The estimation results show that industry and GRDP have a positive and significant effect on job opportunities in the Special Region of Yogyakarta, while the minimum wage, education level, and government expenditure have a negative and insignificant effect on job opportunities in the Special Region of Yogyakarta.

Introduction

Community welfare is the main goal of economic development policies with the hope that people's living standards will increase and the level of job opportunities is high and reduce income inequality in an area. In looking at the development of economic development, the unemployment rate is used as one of the indicators of the economy. The high unemployment rate is caused because the number of the workforce continues to increase but the number of job opportunities does not change or remains at the same amount, causing an imbalance in the labor market, it will have an impact on national economic growth (Pratama & Hadiyanti, 2020).

Job opportunities are one of the important problems in economic development where the number of workers increases from year to year in various regions, including the Special Region of Yogyakarta (DIY). Figure 1 explained the condition of the labor force in 4 Regencies and 1 City in the DIY Province on average continues to increase from year to year and in the Sleman Regency area itself has the largest number of workforce compared to other regions. This is due to the increase in population from year to year which continues to increase. The number of forces that

increase every year can have an impact on increasing the number of unemployed in an area if the number of jobs available in the area is small or cannot accommodate the large number of the workforce who want to work or look for work in the area. The level of employment opportunities in an area can also affect the existing economic conditions, because if an area has a high level of job opportunities, it will have an impact on increasing existing economic growth and will also have an impact on increasing people's welfare.



Source: Manpower and Transmigration Office of Yogyakarta Special Region, 2020

Figure 1. Development of the Labor Force by Regency/City in DIY Province 2010-2019

Meanwhile, the condition of the labor force participation rate, the level of job opportunities and the open unemployment rate in the DIY Province as reflected in graph 2 below shows conditions that are fluctuating or conditions that change every year, but these conditions tend to increase every year in LFPR and TKK, besides that it also tends to decrease in TPT. This will have a positive impact on economic conditions, because if the LFPR and TKK continue to increase, the value of the production of goods or services produced by the community will also increase and this will increase the value of GRDP. Figure 2, shows in 2015 there was a drastic decrease in LFPR, causing TKK in that year to also decrease and this had an impact on the number of TPT which increased in that year. This happened because in that year there was a fairly high increase in the number of the workforce which in the previous year, namely 2014 of 1,862,033 people, increased to 2,018,506 people in 2015, so that the available job vacancies could not accommodate the number of the workforce and This results in the labor force being unable to be absorbed into the economy and this has an impact on increasing the open unemployment rate. According to BPS (2020) in 2015 the main sector that absorbs the most labor is the agricultural sector by 25.10%, wholesale trade by 24.34%, services by 18.71, and industry by 17.70 %. However, in the following year, 2016, the condition of LFPR and TKK began to improve, this was evidenced by a surge in LFPR which in 2015 increased by 63.38%, an increase of about 8.58% in 2016 to 71.96%, while

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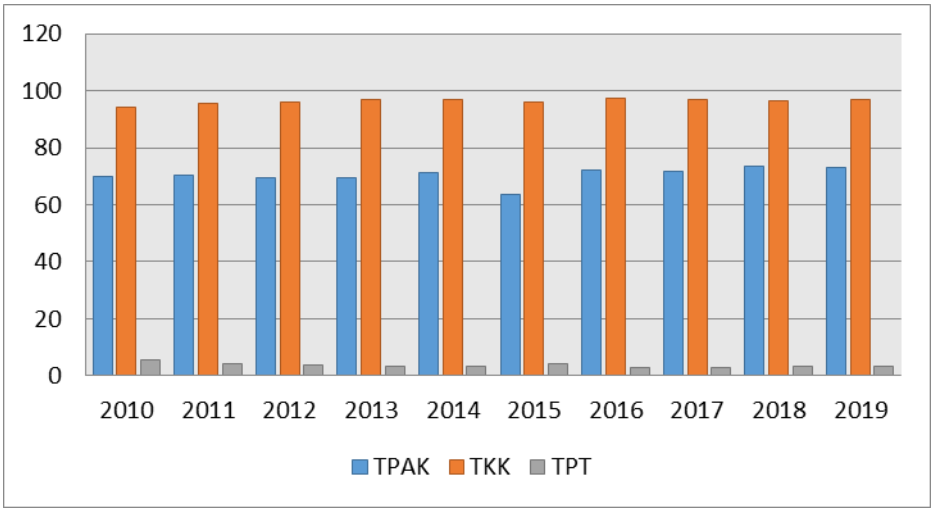
for TKK which in 2015 95.93% increased to 97.29% in 2016. In this way, it has a positive impact marked by a decrease in TPT in 2016 from 4.07% in 2015 to 2.72% in 2016.



Source: Manpower and Transmigration Office of DIY Province and Sakernas, 2021 (processed)

Figure 2. Development of Labor Force Participation Rate (TPAK), Open Unemployment Rate (TPT), and Employment Opportunity Rate (TKK) in DIY Province 2010-2019 (Percent)

The general indicator to describe the size of the population that has the potential to produce goods/services and participate in the production of goods and services is the Employment Opportunity Level (TKK). Based on the data in graph 2 obtained from the National Labor Force Survey (SAKERNAS), the growth in the employment rate in DIY Province during the 2010-2019 period shows data that is fluctuating or unstable and changes every year. This unstable condition of the TKK may be caused by several factors that have an important role in these employment opportunities so that it will have an impact on the TKK which is unstable or fluctuates every year. These changing conditions will cause job seekers to find it difficult to get a job because the level of job opportunities changes every year. And on the other hand the growth of the labor force in the DIY Province as shown in graph 1.2 also shows fluctuating data. With the fluctuating size of the labor force, this means that the number of people looking for work has decreased, but may also increase in the coming year. This means that this indicates a gap between employment opportunities and the labor force, which will affect the absorption of the labor force and affect the unemployment rate. This will certainly cause problems for local governments in overcoming the problem of unemployment in providing job opportunities and meeting people's daily needs such as clothing, food, and education, so that a greater role is needed for local governments.

Government spending is part of fiscal policy and is a form of government intervention in the economy. In macroeconomics, in addition to household sector demand for consumer goods and services, commercial sector demand for investment goods, government spending on goods and services, and foreign export and service expenditures, government spending is defined as a variable forming Gross Domestic Product (GDP) in country. Government spending is a component

of fiscal policy, meaning that the government adjusts the economic process by determining the amount of government revenue and expenditure each year, which is shown in the APBN and APBD. This government spending policy or government spending is empirically proven to be able to influence or have an impact on economic growth both on a national and regional scale, on the contrary economic growth will also be able to have an impact on government spending (Azwar, 2016). The purpose of this fiscal policy is to determine prices, output levels, and employment opportunities, as well as to encourage economic growth and absorb labor (Sukirno, 2000). With government spending, it will be possible to increase the production of a sector of the economy through government spending. In addition, it has the potential to increase people's income because government spending will become a source of community income so as to encourage aggregate demand, because basically government spending refers to government spending on goods and services. Because the increase in aggregate demand will encourage producers to increase their production levels, because of this, producers will need additional production inputs, one of which is by adding labor, therefore this increase in government spending will be able to increase employment opportunities (Ziyadaturrofiqoh, Zulfanetti, & Safri, 2018).

This study has a different method from previous studies that only use time series data and path analysis methods. The panel data model is applied in this study with the advantage that it can identify and measure effects that time series data cannot detect. Another advantage of using panel data is that panel data can provide more information, more variables and reduce collinearity between the observed variables, providing more degrees of freedom and being more efficient. In addition, this study uses the last 10 years so that this research can describe the current state of employment opportunities. This study also uses more data based on 5 districts in DIY, compared to previous studies that only used one location or time series data. So that later it is expected to reduce the problems that can occur when performing regression. This study has the advantage of using 5 independent variables compared to previous studies using only 3 variables. It means this study can see more factors that can affect job opportunities. The contribution of this study is to analyze the effect of Minimum Wage, Education Level, Number of Industries, GRDP, and Government Expenditures on Employment Opportunities in the Province of the Special Region of Yogyakarta.

Method

This study uses a quantitative method approach that aims to analyze the determinants of employment opportunities in DIY. The data used is annual data from 2010 to 2019. This research was conducted in four regencies and one city in DIY Province, namely Yogyakarta City, Sleman

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Regency, Bantul Regency, Gunungkidul Regency, and Kulonprogo Regency. The variables used in this study are:

Table 1 Variable Specification

No	Variable	Definition	Source
1.	Job Opportunities	Number of labor force in DIY Province	DIY Provincial Development Planning Agency
2.	Minimum Wage	The minimum wage set by the governor of DIY from 2010 to 2019 is in units of thousands of rupiah	DIY Central Bureau of Statistics
3.	Education Level	The average length of schooling in DIY Province is in years	DIY Central Bureau of Statistics
4.	Number of Industries	Number of industries in DIY Province with units	Department of Industry and Commerce
5.	Gross Regional Domestic Product (GRDP)	Data Produk Domestik Regional Bruto (PDRB) atas harga konstan di Provinsi DIY dengan satuan juta rupiah	Data on Gross Regional Domestic Product (GRDP) at constant prices in DIY Province in million rupiah
6	Local Government Expenditure	Regional Government Expenditures in each Regency/City in the DIY Province in units of million rupiah	Publication of Regional Finance Statistics from the Central Bureau of Statistics of DIY Province 2010 to 2019

The estimation model used in this study is the panel data model. Panel data is a combination of time series data and cross-sectional data. Cross-sectional data is a collection of data from one or more variables collected over a certain period of time. While time series data is a collection of data obtained at various times and at certain time intervals (Ekananda, 2015). The use of panel data in research offers many advantages, including the capacity to provide more data, produce a greater degree of freedom, more comprehensive information, a higher degree of variability, less collinearity between variables, reduced collinearity between variables, and can overcome the problems that arise due to the omission of variables. According in A'yun et al. (2022) that panel data can be used to avoid the limited number of observations, because the large number of observations will increase the degree of freedom. In addition, panel data is better able to identify and measure effects that cannot be detected by cross sections or time series (Gujarati, 2012). The advantage by using the estimation of panel data is suitable for describing the dynamics of change (A'yun and Khasanah, 2022). Panel data also can measure and detect how is the impact. Panel data also can minimize the bias of the regression result (Baltagi, 2005). The estimation Equation model of this study is as follows:

$$LF_{it} = \alpha_0 + \beta_1 MW_{it} + \beta_2 EDU_{it} + \beta_3 IND_{it} + \beta_4 GRDP_{it} + \beta_5 GOV_{it} + \varepsilon_{it} \quad (1)$$

Where LF is labor force as the dependent variable, MW is minimum wage, EDU is level of education, IND is number of industries, GRDP is gross regional domestic product, Gov is

government expenditure, ε is error term, i is individual, t is time and regression parameter. All of the data are not in natural logarithm. In the estimation of the panel data model, there are three choices of models, namely the fixed effects model, the random effect model, and the common effect model. To be able to choose one of the three models, it is necessary to test the selection of the best model, namely by performing the Chow test, Hausman test and Lagrange test if needed. This research model is in line with Yeni and Marta (2021) that conducted about determinants of job opportunities by education level in Indonesia by using panel data estimation.

Result and Discussion

This study uses a quantitative method approach with the aim of analyzing the determinants of employment opportunities in the Special Region of Yogyakarta. The data used is a combination of time series and cross section data, namely data from 5 cities/districts in DIY in 2010-2019. The 5 cities/regencies are Yogyakarta, Sleman, Bantul, Kulon Progo and Gunung Kidul. The panel data model requires the best model selection test, namely the Chow test to select the best model between the Common Effect Model (CEM) and Fixed Effect Model (FEM). Furthermore, the Hausman test is used to select the best model between the Fixed Effect Model (FEM) and the Random Effect Model (REM). Lagrange test is used to select the best model between Random Effect Model (REM) and Common Effect Model (CEM).

In panel data, the classical assumption test is optional. Some researchers ignore the classical assumption test (A'yun and Khasanah, 2022). According to Gujarati (2012), panel data has complexity regarding the behavior in the model. Therefore, the panel data does not require the classical assumption test. Thus, the superiority of panel data regression implies that there is no need to test classical assumptions (Verbeek, 2000; Gujarati, 2012). Table 2 below shows the results of panel data estimates on the Common Effect Model (CEM), Random Effect Model (REM) and Fixed Effect Model (FEM):

Table 2. Result of Panel Data

Variables	CEM	REM	FEM
C	0.588	0.329	0.429
Minimum Wage	0.186	0.048**	0.251
Education Level	0.501	0.416	0.590
Number of Industries	0.000***	0.000***	0.152
GRDP	0.000***	0.000***	0.603
Government Expenditure	0.748	0.662	0.570

Note: ** p<0.1 **p<0.05 ***p<0.01*

Table 2 above shows the results of panel data estimation from the three models. Next, it is necessary to test the selection of the best model. The estimation results of the diagnostic tools can be seen in Table 3 below:

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Table 3. Diagnostic Tools

Test Effects	Prob
Cross-section F (Chow Test)	0.0126**
Cross-section random (Hausman Test)	0.6602
Chibar2 (LM Test)	1.0000

Note*: * p<0.1 **p<0.05 ***p<0.01*

Thus, in determining the best model to use, this study will look at the results of the estimation of the Common Effect Model, Fixed Effect Model, and Random Effect Model. Based on Table 2, the three estimation results when viewed from the coefficient and probability values, the Random Effect Model is preferred because it has a smaller probability value. While the Fixed Effect Model was not chosen because in this model, when viewed from the coefficient and probability values, none of the independent variables indicated a significant independent variable and this caused the results of the FEM estimation to be less in line with the hypothesis in this study. The Random Effect Model that will be used has advantages, one of which is in its estimation using the Generalized Least Square (GLS) technique which in the event of a BLUE (Best Linear Unbias Estimator) problem can be overcome by the GLS method. In addition, the Random Effect Model that will be used in this study uses a Robust approach so that it can provide a smaller result value (see table 4).

Table 4. Random-Effect Estimation Result

Variables	REM
Minimum Wage	-0.113
	(-1.98)**
Education Level	-10818.1
	(0.81)
Number of Industries	25.844
	(6.83)***
GRDP	0.022
	(8.60)***
Government Expenditure	-0.0000244
	(-0.44)
Another Tools	
R-squared	0.772
F-Stat	149.18***

*** = significance at 1% level ; ** = significance at 5% level ; *= significance at 10% level
Source: Data estimation result, 2022

Table 4 shows the coefficient of determination or R2 overall is 0.7722, meaning that the minimum wage, level of education, number of industries, GRDP and government expenditure variables affect the labor force by 77.2% and the remaining 22.8% is influenced or explained. by other variables outside the model. Furthermore, based on the results of the F test (Table 4), it can be seen that the value of the F-statistic is greater than Prob(F-statistic) and Prob(F-statistic) is

less than 0.05. So it can be concluded that the minimum wage, level of education, number of industries, GRDP and government expenditure variables together affect the labor force.

Based on the results of the study, the minimum wage variable has a negative and significant effect on employment opportunities in the province of DIY. Based on the results of the t-test, the Minimum Wage variable has a coefficient value of -0.1134669 and a probability value of 0.048. This is in accordance with the first hypothesis which states that the minimum wage variable has a negative effect on the labor force. The results of this study are in line with the results of research that has been carried out by Utari (2018) and Nabillah (2020), which show that the Minimum Wage variable has no significant effect on Employment Opportunities. In addition, the results of this study are not in line with the results of research that has been carried out by Lemiyana & Panorama (2018), Dona, Effendi, & Muliati (2018), and Sholeh (2012), whose research results state that the Minimum Wage variable has a significant effect to Job Opportunities. According to research that has been done, an increase in the Regency Minimum Wage and Provincial Minimum Wage that is too high in an area tends to cause companies and industries in the area to switch to capital-intensive technology so that it can have an impact on decreasing existing job opportunities. In addition, a continuous increase in the minimum wage to create benefits for workers must be reasonable, so that the existing workforce in a company will not decrease in the future due to the high minimum wage. This is also the goal of the government's policy on the value of the district minimum wage and the provincial minimum wage. Such policies must be appropriate and well considered in order to improve the decent living of workers without harming the company. Therefore, the minimum wage in the future can help improve welfare, society and regional economic growth. This is also in accordance with the theory that an increase in the average wage is followed by a decrease in the number of jobs demanded, or means the number of unemployed increases. Conversely, a decrease in the average wage level will be followed by an increase in employment opportunities, so it can be said that job opportunities are inversely proportional to the wage level.

Furthermore, the variable level of education has a negative and insignificant effect on the labor force in the Special Region of Yogyakarta. Based on the results of the t-test, the variable level of education has a coefficient value of -10818.1 and a probability value of 0.416. This is not in line with the research conducted by Rekha Puspita & Sudiba (2019) and Manuaba & Kartika (2016), which showed that the level of education variable had a significant effect on the labor force. According to research that has been done, it states that the increase in the Education Level which is calculated based on the average length of schooling in this community, based on research data, the average length of schooling in DIY in 2010-2019 is the highest at 11.46 years and the lowest at 5.74 years. This means that the highest average level of education in DIY is SMA and the lowest is

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SD. The average high school or elementary education level will cause fewer opportunities to work as in companies or industries, because the company or industry will tend to look for workers who have a high level of education such as S1/S2 because the higher the level of education, the higher the level of education. high productivity or ability to work. According to Notoatmodjo (2003), one's ability is obtained from education, therefore a higher level of education is needed so that job opportunities are broad.

This high knowledge is one of the characteristics that society needs to face global issues in the future. A higher level of education will make it easier for someone to absorb knowledge to become a quality human being with a contemporary mentality and the ability to improve production skills to become a driver of the future economy. As a result, the higher the level of education of a person, the better the level of performance of the workforce, so that more individuals with a high level of education will help people enter the economy. In addition, this is in accordance with the theory of human capital which argues that an increase in a person's level of education can increase a person's income (Simanjuntak, 1995).

The variable number of industries has a positive and significant effect on Job Opportunities in the Special Region of Yogyakarta. Based on the results of the t-test, the industry variable has a coefficient value of 25.84428 and a probability value of 0.000. As a result, if the industry grows by 1%, it will increase employment opportunities by an average of 25.84428 percent. This is in accordance with the first hypothesis which states that the Industrial variable has a positive effect on the labor force. The results of this study are in line with the results of research conducted by Arisutha & Darsana (2019), Mukhtar (2011) and Fitri (2018), which state that industry variables have a significant effect on employment opportunities. The increasing number of industries will increase the absorption of labor and expand employment opportunities because with the increase in the number of industries, the need for labor will also increase. This will also have a beneficial effect on the economy, because with the increase in the number of industries, the need for labor will also increase, resulting in an increase in the number of products or services produced in the area, which in turn will encourage regional economic growth and community prosperity.

GRDP has a positive and significant effect on the labor force in DIY Province. Based on the results of the t-test, the GRDP variable has a coefficient value of 0.0222137 and a probability value of 0.000. So, if the GRDP increases by 1 million rupiah, it will increase the labor force by 0.02 percent. The results of this study are in line with the results of research conducted by Budisusilo (2015), Dona et al. (2018), Giovanni & Fadli (2020), Awandari & Indrajaya (2016) and Afiat (2017), which state that the Gross Domestic Product (GDP) variable has a significant effect on employment opportunities. According to research that has been done, increasing the production of goods and services will encourage an increase in the number of workers needed. In this

statement, it can be understood that GRDP has a positive correlation with job opportunities. This is also in line with Deliarnov's (1995) view that an increase in the number of goods and services will lead to an increase in the demand for labor. In this case, it means that when GRDP increases, the demand for labor will also increase. In addition, if the number of workers working in an area increases, the production of goods or services in that region will increase. In other words, regional GRDP will also increase. In addition, the increase in job opportunities will be able to encourage the rate of regional economic growth because the regional economic growth rate can be reflected in the conditions of the increase or decrease in the GRDP.

Government expenditure has a negative and insignificant effect on the labor force in DIY Province. Based on the results of the t-test, the Government Expenditure Variable has a coefficient value of -0000244 and a probability value of 0.662. The results of this study are in line with the results of research that has been carried out by Hellen, Mintarti, & Fitriadi (2017) and Suyanto & Ulfa Eka Hadiyanti (2020), which shows that the Government Expenditure variable has no significant effect on Employment Opportunities. In addition, the results of this study are not in line with the research that has been carried out by Danawati, Bandesa, & Utama (2016), Utama (2011) and Lann (2019), which in the results of their research stated that the Government Expenditure variable has a significant effect on Opportunity. Work. According to research that has been done that government spending that has no effect on job opportunities is because if the government is in the process of developing infrastructure so it needs funds whose funds are called government expenditures which will be used for the development and when the construction process has started it suddenly stops. because of a factor, one of which is the absence of investors. As in 2015, the infrastructure development of the Regional Library in DIY was stopped or delayed (2015). Therefore, it will cause whether or not more workers are needed in the development, so that this will have an impact on decreasing existing job opportunities. Labor is a very important factor of production for every country (Manpower Office, 2019). The greater the population of productive age, the higher the labor force. Furthermore, the lower the education level of a country's population, the lower its workforce will be. This means that currently the level of education is one of the requirements to enter the job.

Conclusion

This study aims to analyze the determinants of job opportunities in the Province of the Special Region of Yogyakarta. This research introduces the idea that minimum wage, level of education, number of industries, GRDP and government expenditure have an influence on the labor force. The data used is annual secondary data from 2010-2019 in 5 Cities/Regencies in DIY Province, namely the City of Yogyakarta, Sleman, Bantul, Kulon Progo and Gunung Kidul. This

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study uses a panel data model with the Random Effect model being the best model used. The results of this study indicate that the minimum wage has a negative effect on the labor force, then the number of industries and GRDP has a positive effect on the labor force, while the level of education and government expenditure has no effect on the labor force. The DIY Provincial Government is expected to continue to make efforts to increase Gross Domestic Product (GDP) by conducting annual evaluations to analyze the economic policies that have been implemented so that in the future it can encourage the regional economy and continue to have a positive influence on job opportunities.The DIY Provincial Government and related agencies can make efforts such as making policies in order to increase the number of business units or industries so that later the industry can absorb more workers and can reduce the number of unemployed in the Regency/City in DIY.

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