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## Characteristics and Determinants of Precarious Employment in Indonesia

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### A B S T R A C T

*Precarious employment is indicator of non-standard work that describes workers in a vulnerable position to lose their jobs which can lead to poverty and can hinder sustainable development. The rapid growth of precarious employment rate is a serious challenge for a developing country. This study aims to analyze the factors that affect precarious workers in Indonesia. The data used in this study is Sakernas August 2019. The analytical method used in this study is logistic regression, where the independent variables are the demographic and employment characteristics of individuals along with macro conditions of regional employment. The findings of this study are that young workers, male, low-educated, unmarried status, and living in urban areas, tend to be precarious workers. Those who work in the manufacturing industry and less than one year of work experience are more likely to become precarious workers. High unemployment rates and low regional average wages also put individuals at greater risk of becoming precarious workers.es.*

### Keywords:

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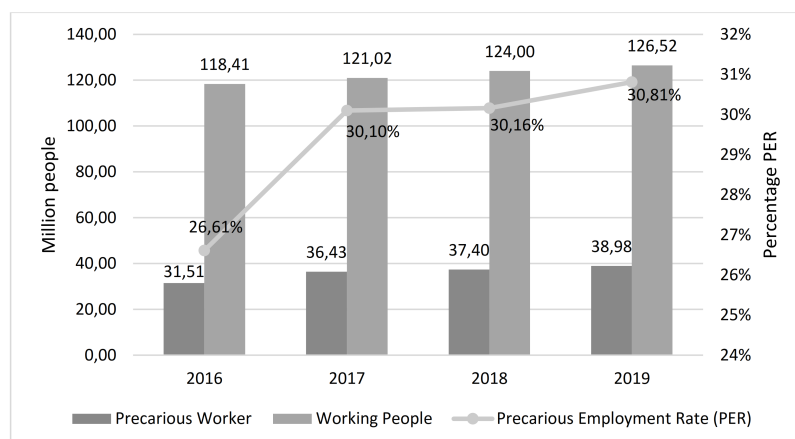
## INTRODUCTION

Labor is an important role in the economic development of a country. The number of workers can improve the economy of a country as long as it is well absorbed and of good quality. The absorption of labor in employment is a challenge in itself in providing decent employment as stated in the Sustainable Development Goals (SDGs) point 8, which is encouraging inclusive and sustainable economic growth, full and productive workforce and decent work for everyone. The absorption of labor in inadequate employment can cause new problems in the country's economy. Workers who are in such an unworthy position can cause poverty to increase and can hinder equity in sustainable development (ILO, 2012).

In general, indicators of labor problems in a region are measured by the Open Unemployment Rate. The lower the unemployment rate in an area, it means that more people work in that area. However, with the increasing number of people who are absorbed in the employment field, there are things that need attention, namely the increasing number of precarious employment as a form of improper work (ILO, 2012; Kalleberg, 2009; Sapkal & Sundar, 2017). The growth of precarious

forms of work in various economic sectors is a consequence of globalization (Kalleberg, 2009; Standing, 2011). Globalization has given rise to more intense competition in international trade. The process of globalization has made the labor market more flexible. Labor flexibility is the responsiveness of labor market adaptation to fluctuations and changes in economic activity (Atkinson, 1985).

Data from the National Labor Force Survey (Sakernas) by the Central Bureau of Statistics (BPS) show that the precarious employment rate in Indonesia has always increased in the last few years. In 2016 the level of precarious workers in Indonesia was 26,61 percent and in August 2019 it reached 30,81 percent (BPS, 2020a). In the last four years, the number of precarious workers increased with an average growth of 7,5 percent per year, while the overall growth in the number of working population only increased by 2,23 percent annually in that period. The growth in the number of precarious workers which is faster than the growth in the number of workers as a whole is a problem that needs attention because it indicates that in recent years more and more jobs have been created, but many of them are jobs that are vulnerable to layoffs.



**Figure 1.**  
**Precarious Employment Rate in Indonesia 2016-2019**

In general, precarious workers are people with low education, low skills, lack of worker protection, and low wages (Kahn, 2007; Kalleberg, 2009; Olsthoorn, 2014; Osterreich, 2013; Tjandraningsih, 2013). Workers who are in precarious positions are very at risk of falling into the unemployment and poverty group, especially when experiencing economic shocks. This group of workers has a risk of job loss, low job satisfaction, low salary receipts and is at risk for poverty (Booth et al., 2002; Kalleberg, 2009; McKay, 2008). Furthermore, the ILO stated that precarious work which is part of decent work suffers from uncertain duration of work, lack of access to social protection and work-related benefits, and low levels of income.

The growth of precarious workers can be caused by constraints in labor market conditions. The labor flexibility theory explains that high unemployment rates and the large number of individuals with general skills mean that employers can be more confident of getting the type of labor they need in the local labor market whenever they need it and as a result employers have less interest in retaining the workforce. work (Atkinson & Meager, 1986). Furthermore, labor market conditions in areas with high unemployment tend to provide low wages and conversely wages tend to be high in areas with low unemployment rates (Borjas, 2016). Thus, the growth of precarious workers can occur in areas with labor market conditions with high unemployment rates and low wages.

Precarious workers are closely related to the lack of human capital investment. Human capital theory views the knowledge and skills possessed by humans as a form of capital that can be used as an investment (Schultz, 1961). Human capital investments such as spending on education, health, and internal migration can make individuals get better job opportunities. Workers

need three main investments in the labor market: education and training; migration; and the search for new jobs (Ehrenberg & Smith, 2012). Furthermore, Borjas (2016) said that human capital theory emphasizes education and training decisions and work experience as important factors in determining a better income or job.

Several previous studies related to precarious workers have been conducted in other countries. Some of them analyze the relationship between individual demographic characteristics of workers and their employment status in the form of temporary workers (Baranowska & Gebel, 2010; C. Young, 2010; Kretsos & Livanos, 2016; Olsthoorn, 2014; Sapkal & Sundar, 2017). In addition to individual demographic characteristics, several previous studies have also analyzed employment variables that are thought to affect precarious workers both on a micro-individual basis such as employment variables (Baranowska & Gebel, 2010; Davis-Blake & Uzzi, 1993; Kretsos & Livanos, 2016), as well as at a macro level such as the unemployment rate in the area where the worker is located (Baranowska & Gebel, 2010; Kretsos & Livanos, 2016; McGovern et al., 2004).

One of the results of previous research that used various individual demographic characteristics as an estimate of the tendency to become temporary workers was the study by Sapkal and Sundar (2017) in India using data for the periods 2009-2010 and 2011-2012 which revealed demographic factors that dominantly influenced the status of non-permanent workers. fixed is marital status. Married workers have a lower risk of becoming non-permanent workers compared to single workers. The results of Olsthoorn's research (2014) in the Netherlands for the period 1996-2008 found that the main characteristic of the workforce that affected non-permanent workers was female workers. Women are

more likely to be in sedentary work due to family responsibilities so they may have limited access to information about labor market opportunities. Kretsos and Livanos (2016) conducted research in 15 European countries in 2009 which explained that young workers aged 20-25 years were found to have the highest risk of being in precarious work compared to other age groups.

Research related to precarious work conducted by C Young (2010) in the United States in 2003 found that the higher the level of education, the lower the risk of workers occupying precarious work. The importance of education represents the theory of human capital which argues that those who invest in their careers through education are more valued at work and more likely to get a high-quality job because it becomes more valuable to employers and reduces the precariousness of the job position and provides security. Blake (1993) in his research in the United States in 1982 found that the main individual employment characteristic of precarious workers was the employment sector, where precarious workers were more widely used in the manufacturing sector than in other sectors. Several previous studies have argued for employment conditions at a macro level, namely the high unemployment rate in a region significantly increases the risk of someone having a precarious job (Baranowska & Gebel, 2010; Kretsos & Livanos, 2016). Based on previous research, it can be seen that there is a relationship between individual demographic characteristics variables such as gender, marital status, age, education, and job characteristics such as the employment sector and the unemployment rate for non-permanent workers.

The update in this study is the use of a new variable that did not exist in previous research, namely the regional average wage. Borjas (2016) said that

wages tend to be high in areas where the unemployment rate is low and wages tend to be low in areas with high unemployment rates. Atkinson and Meager (1986) explain that labor flexibility practices grow due to constraints on labor market conditions. High unemployment rates and the abundance of individuals with common skills mean that employers can generally be more confident of getting the kind of labor they need in the local labor market whenever they need it and consequently employers have less interest in retaining the workforce indicating more and more temporary workers.

The difference between this research and previous research in Indonesia is using national-scale micro data using Sakernas data. Previous research related to precarious workers in Indonesia was conducted by Tjandraningsih (2013) using non-national-scale micro data on only a few companies and using descriptive analysis. The analysis in this study was carried out using the August 2019 Sakernas data which covers all districts/cities in Indonesia. This research is organized into four parts. The first part is the introduction, the second part is the research method, the third part is the results and discussion, and the fourth part is the closing. The first section reviews the background, objectives, and theories regarding precarious workers in Indonesia. The second part describes the research methods, namely research variables, analysis techniques, types and sources of data. The third section describes the empirical results of the study, and the fourth section covers conclusions and suggestions.

## **METHODOLOGY**

This study uses a quantitative approach with logistic regression analysis method. The logistic regression analysis method can be used to explain the effect of demographic and employment characteristics on the categorical

dependent variable of employment status. Descriptive analysis is also used to provide a description or description of the general situation of precarious workers according to demographic and employment characteristics. The inferential analysis used in this study is logistic regression analysis. Logistic regression is a data analysis method used to find the relationship between the categorical dependent variable and the independent variable. The logistic regression model is used to estimate the probability that a worker will become a non-permanent worker. This study uses binary logistic regression.

This study aims to analyze the effect of demographic and employment characteristics on precarious workers in Indonesia. The data used in this study is the August 2019 Sakernas cross section data. The use of the August Sakernas data is because the data is survey data with a large sample size covering all districts/cities in Indonesia. This study uses 2019 data because that year is the latest data availability where there is a contract/work agreement relationship status variable as an indicator of precarious workers. The unit of observation in this study is the working population aged 15 years and over with status other than family workers. Furthermore, the eligible samples in this study were 441,330 individual workers consisting of 132,668 permanent workers and 308,662 precarious workers.

The dependent variable used in this study includes two categories, namely precarious workers and other than precarious workers. The criteria for precarious workers in this study include: (1) workers/employees who have a certain time work agreement; (2) a laborer/employee who has a verbal work agreement; and (3) a casual worker or a person who works for another person/employer/institution that is not permanent (more than one employer in the past month). This concept

is based on the definition from BPS where precarious work refers to residents who work as casual workers, working with short-term contracts, seasonal workers, and workers who are employed with work contracts that can be terminated at any time under certain conditions only on short notice (BPS, 2018). Meanwhile, workers other than precarious workers include: (1) workers with self-employed status, (2) workers with business status assisted by workers, (3) workers with labor/employee status who have an indefinite time work agreement. Furthermore, the independent variables used in this study consisted of from age, gender, marital status, education, regional classification, business field, work experience, provincial unemployment rate, provincial average wage.

The econometric model in this study uses logistic regression because the model can be used to explain the effect of demographic and employment characteristics on the variable determining employment status which consists of two categories (dummy binary). dummy on this variable, namely Y=1 for temporary workers; and Y=0 for workers other than temporary workers which are the reference category (reference category). Category Y= 1 will be compared with the reference category in the form of a logit function so that a binary logistic regression function equation will be formed. The general form of the logistic regression model with the number of k independent variables is as follows:

$$\ln \left( \frac{P_1}{P_0} \right) = \beta_j + \sum_k^K \beta_{jk} x_k \dots \dots \dots (1)$$

Where k = 1, 2, 3, ..., K; k is the number of independent variables.

$$Z = \ln \left( \frac{P_1}{P_0} \right) = \beta_{10} + \beta_{11} x_1 + \beta_{12} x_2 + \dots + \beta_{1k} x_k + \varepsilon \dots \dots \dots (2)$$

The parameters in the model are estimated using the maximum likelihood

method (Gujarati, 2004). Interpretation of opportunities can be done by antilogging the logit estimation results and then getting  $P_1 / P_0$  that is the probability ratio is the magnitude of the probability for each category, if there are two categories of dependent variables then:

$$P_0 = \Pr (Y = 0 | x) = \frac{1}{1+e^z} \dots\dots\dots(3)$$

$$P_1 = \Pr (Y = 1 | x) = \frac{e^z}{1+e^z} \dots\dots\dots(4)$$

So it can be written:

$$P_1 / P_0 = e^z \dots\dots\dots(5)$$

which is the ratio of opportunities to become precarious workers to other than precarious workers with certain independent variables.

**RESULT AND DISCUSSION**

This study observed working population aged 15 years and over in Indonesia in 2019. The number of observations in this study was 441,330 individuals. From all these observations, there were 132,668 temporary workers. The percentage of precarious workers in 2019 was 30.1 percent.

Table 1 presents the characteristics of precarious workers based on the demographic and employment variables used in the study. Precarious workers in Indonesia in 2019 were dominated by men with a not too significant difference in percentage compared to women with only a difference of about 1 percent. The age variable in this study, to facilitate descriptive analysis, was grouped into 5 categories, namely 15-24 years, 25-34 years, 35-44 years, 45-54 years, and 55 years and over. Based on age group, the percentage of precarious workers aged 15-24 years is almost on par with non-permanent workers, namely 50 percent, which is the largest percentage compared to other age groups.

By age group, the percentage of precarious workers is dominated by the young age group. The older the worker, the smaller the percentage of precarious workers. In line with previous research in other countries where the higher the age of the worker, the lower the percentage of precarious workers (Kretsos & Livanos, 2016). Young workers have just entered the workforce with little experience, so many are still changing jobs. Young workers are often employed by employers because many have general skills or little experience so that they can be paid lower and with a contract system they can be replaced according to the required production output (Atkinson & Meager, 1986). Furthermore, in terms of marital status, precarious workers are more single or unmarried with a percentage of almost 2 times that of those who are married or divorced. This is in line with the characteristics of the majority of precarious workers who are young, where the young population is usually unmarried.

In this study, precarious workers in Indonesia based on education level are dominated by workers with a senior high school and above which reached 36 percent, more than workers with low or junior high school education and below which only amounted to 25 percent. This can happen because college graduates are more likely to look for work as employees while employment opportunities as permanent employees are very limited. The results of the 2019 Sakernas data show that college graduates are laborers/employees (83%) of which almost half (47,7%) are precarious workers, and only a few graduate of college are entrepreneurs (16,5%). Many workers with entrepreneurial status have secondary education (SMA) or low education (junior high school and below), namely 41,1% and 61,7% respectively.

Temporary workers with single status experienced the highest percentage increase compared to those with currently married or divorced status. The majority

of precarious workers live in urban areas compared to rural areas. Furthermore, more than 44 percent of precarious workers are absorbed in the industrial sector. Of the 3 classifications of business sectors (agriculture, industry, and services), the sector with the least number of precarious workers is the agricultural sector. Precarious workers are more dominant who have never participated in on-the-job

training. The interesting thing here is that most of the temporary workers have more than 1 work experience. This shows that the status of temporary workers is not always dominated by newcomers in the world of work as a stepping stone in the search for work experience, but mostly is a main job already lasts a long time in supporting the life of the individual.

**Table 1**  
**Demographic and Employment Characteristics of Individual Precarious Workers (Number and Percentage) in Indonesia in 2019**

<b>Characteristics</b>	<b>Precarious Workers</b>	<b>Other than Precarious workers</b>
Gender		
Man	88.597 (30,58 %)	201.108 (69,42 %)
Woman	44.071 (29,07 %)	107.554 (70,93 %)
Group Age		
15-24	22.580 (50,78 %)	21.882 (49,22 %)
25-34	35.043 (39,52 %)	53.633 (60,48 %)
35-44	34.486 (29,26 %)	83.368 (70,74 %)
45-54	25.973 (24,80 %)	78.769 (75,20 %)
55 years and over	14.586 (17,04 %)	71.010 (82,96 %)
Marital status		
Single	32.872 (49,40 %)	33.669 (50,60 %)
Married	91.208 (27,23 %)	243.807 (72,77 %)
Divorced	8.588 (21,59 %)	31.186 (78,41 %)
Education		
Middle school dan below	64.867 (25,45 %)	189.996 (75,55 %)
High School and above	67.801 (36,36 %)	118.666 (63,64 %)
Region classification		
Urban	66.115 (33,50 %)	131.264 (66,50 %)
Rural	66.553 (27,28 %)	177.398 (72,72 %)
Business field		
Agriculture	26.971 (19,61 %)	110.564 (80,39 %)
Industry	41.015 (44,45 %)	51.263 (55,55 %)
Service	64.682 (30,58 %)	146.835 (69,42 %)
Training		
Never	115.410 (29,5 %)	275.742 (70,5 %)
Ever Followed	17.258 (34,4 %)	32.920 (65,6 %)
Work experience		
0-12 month	23.879 (46,24 %)	27.762 (53,76 %)
More than 1 year	108.789 (27,92 %)	280.900 (72,08 %)

The results of the inferential analysis can be seen in table 2. The gender variable has a significant influence in explaining the tendency of precarious workers. Men tend to have a 1,1 times higher chance of becoming temporary workers than women. This shows a different result compared

to previous studies in other countries, the majority of which result in a tendency that precarious workers are women (Kretsos & Livanos, 2016; Olsthoorn, 2014; Sapkal & Sundar, 2017).

Many male workers in Indonesia are trapped in precarious jobs due to the lack

of permanent job opportunities compared to female workers. Sakernas August 2019 data shows that the proportion of male precarious workers is two-thirds of the total number of precarious workers while the number of female temporary workers is only one-third. Most men are trapped as temporary workers in the construction and agriculture sectors where both sectors contribute 21% each. This is because work in this sector requires a strong workforce which is generally owned by men and the sector does not always have work projects or is sometimes seasonal. The work was forced to be taken by men due to the demands of the head of the household who had to earn a living so that they had to work anything including being temporary workers, while women still had a large tendency to play a major role in taking care of the household.

The age variable has a significant effect and it can be seen that the young age group has a high tendency to become temporary workers. This is in line with the results of previous studies which stated that the older a person is, the less likely he is to become a temporary worker (Kretsos & Livanos, 2016). Young workers tend to be at risk of becoming precarious workers because at a young age is the initial stage of entering the world of work so that they are more able to accept any job even though it is a temporary job with the aim of finding suitable work experience. Employers also often employ young workers because of the large number of young workers with general skills or little experience so that they can be paid lower and with a contract system they can be replaced at a later date according to the required production output. This is in accordance with the theory of labor flexibility proposed by Atkinson and Meager (1986).

The marital status variable shows a significant effect on the tendency to become temporary workers. Workers with unmarried status have a 1,4 times

higher tendency to become precarious workers compared to those with married status. Marriage brings stability to the lives of workers which requires them to find stable jobs to support their families so that married workers are more likely to have jobs with guaranteed job continuity (Sapkal & Sundar, 2017).

Based on the results of the study, the education level variable showed a significant effect on the risk of becoming a temporary worker. Workers with low and middle education have a lower tendency to become temporary workers compared to workers with higher education. According to human capital theory, the higher the education of the workforce, the more competence will increase, thereby increasing their chances of finding a better job (Borjas, 2016). However, different conditions occur in Indonesia where workers with higher education tend to be more likely to become temporary workers. This is because the availability of employment as permanent workers is limited for university graduates so that those with higher education end up also becoming temporary workers. In addition, this phenomenon is possible because people with higher education tend to have more choices to choose many types of work so that they can move between jobs to be able to find better job opportunities.

When viewed according to the classification of the area where workers live, in general those who live in urban areas have a 1,06 times higher tendency to become temporary workers than those who live in rural areas. This is in accordance with the view of urban areas that provide various types of work, including jobs that are not permanent in nature. This result is in accordance with previous research which found that the individual's chances of becoming precarious workers were greater for individuals who lived in urban areas (Sapkal & Sundar, 2017).

Based on business fields which are



divided into 3 major groups, the results show that workers who work in industry or manufacturing have a 2,4 times higher chance of being in a temporary worker position compared to agriculture. The results of this study are in line with previous research where precarious workers are used more in the manufacturing sector than in other sectors (Davis-Blake & Uzzi, 1993). The development of labor flexibility occurs in the manufacturing industry sector because business strategies in the manufacturing industry apply a shift to lower costs, high production volumes and continuously by applying new technologies to improve quality and capacity so that companies emphasize workforce flexibility (Atkinson & Meager, 1986).

The more dominant the manufacturing sector in the economy of a region can indicate the increasing number of precarious workers in the region. For example, in the provinces of West Java, Central Java, and East Java, where more than 30% of the economy comes from the manufacturing sector (BPS, 2020b), the proportion of precarious workers is also large, namely 40%, 33% and 35 percent respectively. Meanwhile, in areas where the economy relies on the agricultural sector, such as the provinces of Aceh, Jambi, and Lampung where more than 30% of the economy comes from the agricultural sector, the proportion of precarious workers is only 28%, 29%, 27%.

Training and experience are part of human capital to get a better job. In this study, training and work experience have a significant effect on the chances of becoming a temporary worker. Workers who have never attended training are less likely to become temporary workers. This is possible because many precarious workers are young, so many of them when they just enter the world of work, first attend training held by the agency where they are temporarily working to support their work.

Work experience has a significant influence on precarious workers. Workers who have low work experience (0-12 months) have a 1,5 times higher chance of becoming temporary workers. The results of this study are in line with human capital theory which explains education decisions and work experience as important factors in determining income and opportunities to choose a job. better (Borjas, 2016). People who have higher education and experience will earn more and reduce the risk of job position insecurity and provide security (C. Young, 2010).

The macro employment variable also has a significant effect on the tendency to become precarious workers, including the open unemployment rate and the regional average wage. The higher the unemployment rate in an area, the more workers living in that area are at risk of becoming precarious workers. These results are the same as those revealed in previous studies where the high unemployment rate of a region significantly increases a person's risk of having a precarious job (Baranowska & Gebel, 2010; Kretsos & Livanos, 2016). Precarious workers grow because of constraints in labor market conditions, namely the high unemployment rate (Atkinson & Meager, 1986).

The results of this study also show that the higher the average wage in the area, the lower the risk of becoming a casual worker. This is in accordance with the wage theory where there is a negative relationship between the unemployment rate in a region and the wage level (Ehrenberg & Smith, 2012). It has been explained previously that areas with high unemployment rates will have a higher risk of individuals becoming precarious workers, so that if the average wage of a region is lower, the unemployment rate will be higher, so the chances of individuals becoming temporary workers will also be higher.

**Table 2.**  
**Odds Ratio of Logistics Regression Results**

<b>Variable</b>	<b>Odds Ratio</b>	<b>Std. Err.</b>
Gender		
Man	1,12***	0,0086
Woman (reference)	Ref	
Age	0,98***	0,0003
Marital Status		
Single	1,45***	0,0151
Married (reference)	Ref	
Divorced	1,06***	0,0147
Education	1,10***	0,0031
Region Classification		
Urban	1,06***	0,0080
Rural (reference)	Ref	
Training		
Never	0,95***	0,0107
Ever Followed (reference)	Ref	
Working experience		
0-12 months	1,53***	0,0158
More than 1 year (reference)	Ref	
Business Fields		
Agriculture (reference)	Ref	
Industry	2,48***	0,0254
Service	1,23***	0,0124
Unemployment rate	1,07***	0,0029
Ln_wage	0,76***	0,0165
Pseudo R <sup>2</sup>	0,0731	
Prob > chi <sup>2</sup>	0,0000	
Number observation	441.330	

Description: \*\*\* = p < 0,01

## CONCLUSIONS

Demographic and employment characteristics that affect a worker's chances of becoming a temporary worker in Indonesia are gender, age, marital status, education, and area of residence. A male youth with low education, unmarried status, and living in urban areas has a greater chance of becoming a temporary worker. Those who work in the manufacturing industry and have less than 1 year of work experience are more likely to become temporary workers. In addition, those who live in areas with high unemployment rates and low regional average wages will be more at risk of getting precarious work. The young population should always prioritize education as an investment in human capital supported by government policies with the ease of getting education for all people up to the university level. The government should also be able to encourage entrepreneurs

to create many jobs so as to further reduce the unemployment rate and control and monitor minimum wage policies so that the average wage in each region is not too low, especially in urban areas and in the manufacturing industry sector. This research would be better if the analysis was carried out by comparing the results of data analysis from several previous years with consideration of differences in labor market conditions. The addition of independent variables and the use of better analytical methods in future studies are also expected to get better results.

Policy recommendations that can be concluded from this research are that the government is expected to be able to pay more attention to the young population by providing job training with a focus on industrial training, for example through vocational training centers. Economic development in the regions is also maximized according to the potential of

each region so that the unemployment rate will decrease and the regional average wage will increase so that the risk of becoming a precarious worker tends to decrease. The government is expected to be able to guarantee affordable education for all people in terms of access, cost and quality. Compulsory education programs need to be ensured to run as planned and also the government still needs to improve the scholarship program.

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