

Factors Affecting the Unemployment Rate in Jambi Province

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Abstract

This research aimed to: 1) analyze the characteristics of unemployment in the regencies/cities in Jambi province, 2) analyze the aspects of affecting unemployment in the regency/city in Jambi province, and 3) analyze the profile and description of job seekers in regencies/ cities in1 Jambi Province. To achieve these objectives, this research was designed with panel data research by combining primary data (cross-section), and secondary data (time series). The data sources were obtained from government agencies and other official sources such as internet sites. This research took place in 11 regencies /cities in Jambi Province. The analytical method used was descriptive qualitative and descriptive quantitative. The results showed that economic growth, education level, and population growth affect the unemployment rate in regencies/cities in Jambi Province. In other sites, the causes of the increase in the number of job seekers in regencies/cities in Jambi Province were the population and employment variables. This research suggested that the regencies/cities government in Jambi Province could increase broader employment opportunities by being more active in opening opportunities for investors. Besides that in this research, it is necessary to conduct research in a longer time, as well as adding variables which are thought to influence unemployment.

Key words: unemployment rate, education level, economic growth

Introduction

Unemployment can be interpreted as a part of a workforce that actively looks for a job. The more the number of workforce in an area, the greater the number of unemployment. Based on the information published by Statistics Indonesia or knows as Badan Pusat statistik (BPS) in 2018, the number of unemployment in Jambi Province in 2012 was 5,39%, and in 2017, it became 4,00 %. If the figure was compared nationally, it was called lower. In the same year, the unemployment in Indonesia was 7,40% in 2012 and 5,61% in 2017. Even though relatively, the workforce that was looking for a job in Jambi Province was small, but nominally the figure was 73,849 people in 2017 (BPS, 2018).

Related to employment opportunities, in general, it was a situation that described the number of workforces that could be absorbed in economic activity. According to Feriyanto, N (2014), the employment opportunity is the number of job vacancies which accommodated by employment to produce a certain amount of output or those who have economic activities that can produce goods and services (working). Based on BPS data (2018), the number of workforces that work in Jambi Province in 2012 was 1.423.624 people, then it increased to 1.657.817 people in 2017. This means that in 2012 to 2017 there had been 3,14 as average increased per year. The more job opportunities opened the smaller number of the unemployed workforce.

The case of unemployment is a complex problem, there are many factors affect unemployment in society and they interact each other. The number of unemployment rate reflects the achieved success in economic development. Economic development is a reflection of an increased number of goods and services obtained by a region/district in a certain period. The research conducted on the effects of unemployment shows that it is influenced by many factors such as economic growth, education level, and population growth.

The economic growth is used as one indicator in development, where the higher economic growth will affect on the availability of the number of goods and services produced. Economic growth is a real

description of the impact of development policy. High economic growth will encourage high economic activity as well, this gives opportunities for employment opportunities to reduce unemployment. Along 2012 to 2017, the economic growth of Jambi Province showed a fluctuating figure from 7,07% in 2012 and increased 7,27% in 2014 then decreased to 5,37% in 2017, this condition certainly affected the unemployment.

The education level of the population affects unemployment, through education, it will develop someone's thinking skill. For Jambi Province, there had been an increased in an average of Education in 2012 by 8.30 to 9.57 in 2017 (BPS, 2018). This means that there had been an increased in the average length of education of the population that aged 15 years and over for 1,27 years within a period of 5 years.

The population growth is one indicator that used to describe the condition of population, the achieved development progress and the economy of a region. High population growth will cause the goods demand and the increased services. The increasing population that is not balanced with the provision of employment will have an affect on the increasing of unemployment. Through the understanding of the unemployment rate in regencies/cities in Jambi Province, this can be used to identify the causing factors and the solutions.

Based on the problem describe above, the objectives of this research are: (1) To analyze the characteristics of unemployment according to regencies / cities in Jambi Province, (2) To analyze the factors that affcet the unemployment in regencies/cities in Jambi Province, and (3) To analyze the profile and reasons for job seekers in Jambi Province with a case study at labor and cooperatives office.

Methods

This research used panel data which is a combination of *time series* and *cross section*. The time series data started in 2012 to 2017 and cross section were the data from 11 regencies/cities in Jambi Province. Panel data is more informative, reducing colinearity between variables and increasing the degrees of freedom which means increasing efficiency (Firdaus, 2012). Then, the primary data were collected through a survey using questionnaire by interviewing 36 respondents who were looking for a job at the Labor and Cooperative office in Jambi City.

The data were analyzed by using descriptive and quantitative method. Descriptive method was used to analyze the characteristics factors that affected unemployment by Regencies/Cities in Jambi Province. The analysis can be done by three approaches (*pooled least square* approach, *fixed effect* approach, and *random effect* approach). Pooled least square is used in data in the form of a *pool* and it is a simple approach in processing panel data. *Fixed Effect Method (FEM)* is a method that estimates the panel data by using *dummy* variables to detect intercept differences.

The model used in this research was multiple linear regression. The regresion model involves a linear relationship between independent variable and dependent variable where the independent variable is more than one (Amir, 2009).

Results and Discussion

The Unemployment Characteristics Based on Economic Growth, Education Level, and Population Growth Rate in Jambi Province

Economic Growth

The economic growth describes the increased of goods and services produced by a region in a certain period (one year). The growth of PDRB from year to year shows the economic growth level that achieved by the area is getting better (Yulmardi, 2018).Based on the data of economic growth by the regencies/cities in Jambi Province varies greatly. In 2012, the highest economic growth was in Bungo Regency if it was compared to the existing regencies/ cities, with the achievement of 9,65% and higher than Jambi Province which was 7.03%. In the same year, East Tanjung Jabung Regency was known as the region with the lowest economic growth with 2,78 %.

In 2013, Bungo Regency was 9,02 % as the highest economic growth. Then, Jambi City with a growth of 8.50% an followed by Sungai Penuh City as 8,45%. These three regions with the economic growth above the average of Jambi Province with a growth of 7.07%. Overall, from 2012 to 2017, the highest rate of economic growth was in Sungai Penuh where it was 7,15%, and followed by Jambi City and Kerinci Regency with the growth was 6,90%. There were three Regencies such as Tanjabtim (3,48%), Tanjabbar (4,65%), and Sarolangun (5,56%) that have the economic growth rate below Jambi Province was 5,48%.

The Development of Education Level in Regencies/Cities in Jambi Province

It was known that the average length of schooling in Regencies/cities in Jambi Province varied greatly. Jambi City was the highest average length of schooling in in 2012 for 10.30 years and increased to 10.66 years in 2017. This means, in 6 years in Jambi City, the population has completed 6 years in elementary school, 3 years in Junior High School and 1,66 years in Senior High School. The high achievement of the average length of school completed by people in Jambi City compared to the average of Jambi Province for 8,15 years was possible for various reasons. The high ratio of a teacher with students, the more concern the people with the importance of education, various conveniences in entering schools, and supported y smooth public transportation.

The lowest average length of school was in Tanjung Jabung Timur Regency. In this regency, at the beginning it was 5,88 years and in 2014 the population on average have not completed the 6 years of basic school. In 2015, the average length of school just passed 6,26 years and 2 years later 2017 increased to 6,33 years. The average length of school achieved by Tanjung Jabung Timur Regency when compared with the average length of Jambi Province in 2012 was still below the average of 7,62 years. If it was counted fro 2012 to 2017 there was only a development of 1,53 %, but the development was higher than Tanjung Tabung Barat which was 0,64% and Jambi City was 0,70%.

If it was seen from the development of average length of school during the research, it turned out that Bungo regency got the highest development of 2,74% followed by Sungai Penuh City 2,03% then followed by Merangin Regency with 1,83%. On average, the development of school length average for the population of above 15 years old in Jambi Province was 1,39%. The regencies/cities that were above the provincial rate based on the highest rank were Bungo Regency Sungai Penuh City, Merangin Regency, Tanjung Jabung Timur Regency, and Muaro Jambi Regency. For the regencies/cities that the development were below the provincial rate were: Kerinci Regency (1,33%), Sarolangun Regency (1,07%), Batanghari Regency (1,06%), Tebo Regency (0,83%), Jambi City (0,70), and Tanjung Jabung Barat (0,64%).

The Development of Regencies/Cities Population Growth in Jambi Province

Based on the data, it can be explained that along 2012 to 2017 there has been population growth in Jambi Province of 1,88 %. In regencies/ cities in 2012, the highest growth was in Muaro Jambi Regency (3,05%) and the lowest was in Kerinci Regency (0,38%). The high population in Muaro Jambi Regency was assumed because this regency is near to Jambi City as the capital of Jambi Province and the easy access to the regency. For Kerinci Regency that experienced the lowest population growth, it was caused by a large number of outgoing migrations and increasingly narrow the rate of land tenure in the area concerned. Then, some regencies/cities with population growth rates below the provincial average are listed as follows Tanjung Jabung Timur (0,73%), Sungai Penuh City (1,04%), Batanghari (1,53%), and Jambi City (1,57%)

During 2013 to 2017, all regencies/cities in Jami Province showed a decline in population growth rates. This condition can be seen from the average growth of Jambi Province which has continued to decline from 1,83% percent in 2013 to 1,62% percent in 2017. On average, the population growth from 2012 to 2017 in regencies/cities in Jambi Province remained the lowest in Kerinci Regency (0,40%), and the highest occurred in Muaro Jambi for 2,86%.

The Analysis of Factors Affecting Unemployment in Regencies/Cities in Jambi Province

To find out how the effect of economic growth, education level, and population growth on the unemployment rate in Jambi Province, it is used panel data regression calculation. The data used is the annual time series for 2012 to 2017, and cross-section data that consist of 11 regencies/cities in Jambi Province.

To estimate using panel data, it can be used Chow test, Hausman Test, or Lagrange Multiplier Test. Chow test is used to determine which method is good between PLS or FEM. If PLS method is better, it does not need to do the Hausman Test but it continued with the Lagrange Multiplier test to determine the best method between PLS and REM. However, if FEM is the best, it will be continued by the Hausman test to determine the best between FEM and REM.

The result of Chow test, which done to compare or determine which model is the best between PLS and FEM.

Table 1 Chow Test to Determine PLS and FEM Models

Redundant Fixed Effects Tests
Pool: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.733315	(10,53)	0.0973
Cross-section Chi-square	18.674792	10	0.0446

Source: Data processed, Eviews 9 (2019)

Based on the output Eviews in table shows that F test and Chi-Square are significant (Prob. 0,0973 and 0,0446 are smaller than alpha 0,10%), so H0 is rejected and received H1 H1.

It can be concluded that FEM model is better than PLS model. Then, a comparison between FEM and REM method which one is better, so Hausman Test can be used.

Table 2 Hausman Test to Determine FEM and REM Models

Correlated Random Effects - Hausman Test
Pool: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.266389	2	0.8753

Source: data processed, Eviews 9 (2019)

Based on the Eviews output in the table, it shows the value of F Chi-square statistics has Prob. It is higher than 0,10% alpha (0,8753>0,10), so H0 is accepted and H1 is rejected. This means that REM model is better than FEM. Then, it is done Lagrange Multiplier Test to estimate the best method between PLS and REM. Below is presented in the Langrange Multiplier Test table.

Table 3 The Lagrange Multiplier Test Table to determine the PLS and REM model.

Lagrange multiplier (LM) test for panel data
Date: 09/10/19 Time: 22:09
Sample: 2012 2017
Total panel observations: 66
Probability in ()

Null (no rand. effect)	Cross-section	Period	Both
Alternative	One-sided	One-sided	
Breusch-Pagan	1.376243	0.222135	1.598378

Table Cont..

	(0.2407)	(0.6374)	(0.0061)
Honda	1.173134	-0.471312	0.496263
	(0.1204)	(0.6813)	(0.3099)
King-Wu	1.173134	-0.471312	0.292484
	(0.1204)	(0.6813)	(0.3850)
GHM	--	--	1.376243
	--	--	(0.0460)

Source: Data processed, Eviews 9 (2019)

Starting from the results of the table that the value of Prob, Breush-Pagan (BP) is 0,0000 (in the third column, "Both"). Through the hypothesis that has been formulated, if Prob. BP (0,061) < 0,10, then reject H0 and accept H1 so the suitable model is Random Effect Model (REM). By the tests that have been done to the three models, where what often appear is REM method, the conclusion in this research determines the use of REM method.

The Estimation Using the Random Effect Method (REM)

The result of panel data regression test through REM method where the variable of economic growth, education level, and population growth toward the unemployment rate is presented in the following table.

Table 4 The Estimation Result of the Random Effect Method (REM)

Dependent Variable: TPG?

Method: Pooled EGLS (Cross-section random effects)

Date: 09/13/19 Time: 10:33

Sample: 2012 2017

Included observations: 6

Cross-sections included: 11

Total pool (balanced) observations: 66

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.302466	2.405615	-1.788510	0.0786
PE?	0.211698	0.147784	1.832481	0.0770
TP?	1.025759	0.288492	3.555590	-0.0007
PP?	-0.337088	0.449408	-0.750071	0.4560
Random Effects				
(Cross)				
_KERINCI--C	-0.176844			
_MERANGIN--C	0.573272			
_SAROLANGUN--C	0.185908			
_BATANGHARI--C	0.174520			
_MUAROJAMBI--C	0.352798			
_TANJABTIM--C	-0.100295			
_TANJABBAR--C	-0.187837			
_TEBO--C	-1.080123			
_BUNGO--C	-0.201756			
_KOTAJAMBI--C	-0.230915			

Table Cont...

<u>_SUNGAIPENUH--C</u>	0.691273		
Effects Specification			
		S.D.	Rho
Cross-section random		0.780039	0.1672
Idiosyncratic random		1.740910	0.8328
Weighted Statistics			
R-squared	0.535020	Mean dependent var	3.002589
Adjusted R-squared	0.398005	S.D. dependent var	1.901234
S.E. of regression	1.702634	Sum squared resid	179.7357
F-statistic	6.349290	Durbin-Watson stat	1.567545
Prob(F-statistic)	0.000799		

Source: Data processed, Eviews 9 (2019)

The Estimation of REM Model Coefficient in Regencies/Cities in Jambi Province

Based on the estimation of REM model, it can be explained that intercepts of each regency/ city in Jambi Province have a different value. Individual Random Effect as shown in the following table:

Table 5 The Estimation of REM Individual Effect Model

Regencies/Cities	Random Effect
Kerinci	-0.176844
Merangin	0.573272
Sarolangun	0.185908
Batanghari	0.174520
Muaro Jambi	0.352798
East Tanjung Jabung	-0.100295
West Tanjung Jabung	-0.187837
Tebo	-1.080123
Bungo	-0.201756
Jambi City	-0.230915
Sungai penuh City	0.691273

Source: Data processed, Eviews 9 (2019)

Based on the estimation in the table, it can be seen that the value of individual effect on the result of REM method can be explained below.

Kerinci Regency

If there is a change of economic growth, education level, and population growth between regions and time, Kerinci regency will get an individual influence on the unemployment rate of -0,176844.

Merangin Regency

If there is a change in economic growth, education level, and population growth between regions and time, Merangin regency will get an individual influence on the unemployment rate of 0,573272.

Sarolangun Regency

If there is a change in economic growth, education level, and population growth between regions and time, Sarolangun regency will get an individual influence on the unemployment rate of 0,185908.

Batanghari Regency

If there is a change in economic growth, education level, population growth between regions and time, Batanghari Regency will get an individual influence on the unemployment rate of 0,174520.

Muaro Jambi Regency

If there is a change in economic growth, education level, and population growth between regions and time, Muaro Jambi regency will get an individual influence on the unemployment rate of 0,359728.

East Tanjung Jabung Regency

If there is a change in economic growth, education level, and population growth between regions and time, East Tanjung Jabung Regency will get individual influence on the unemployment rate of 0,100295

West Tanjung Jabung Regency

If there is a change in economic growth, education level, and population growth between regions and time, West Tanjung Jabung Regency will get an individual influence on the unemployment rate of -0,187837.

Tebo Regency

If there is a change in economic growth, education level and population growth between regions and time, Tebo regency will get an individual influence on the unemployment rate of -0,080123.

Bungo Regency

If there is a change in economic growth, education level, and population growth between regions and time, Bungo regency will get an influence on the unemployment rate of -0,201756.

Jambi City

If there is a change in economic growth, education level, and population growth between regions and time, Jambi city will get an individual influence on the unemployment rate of -0,230915.

Sungai Penuh City

If there is a change in economic growth, education level, and population level between regions and time, Sungai Penuh City will get an individual influence on the unemployment rate of 0,691273.

The Profile of Job Seeker in Jambi Province (A survey at Labor and Cooperatives Office in Jambi City) the Identity of Job Seeker

The 75,00% of job seekers come from Jambi City, and the rest is 22,22 % from out of Jambi, then the rest is 2,78% from out of Jambi Province. A total of 83,88% of respondent aged between 18-28 years and the rest is 16,22% aged over 28 years. Female job seekers are 52,78% higher than 88,89% male job seekers in Jambi Province had high school education and above, and only around 16,22% they are junior high school or below.

Job Search Effort

83,33% of respondents had looked for a job before, whereas 16,67% never looked for a job. Thus, the high proportion of those who had looked for a job explained that among those who registered there were those who repeatedly applied for jobs and did not get any chances. Based on the first time which is 44,45% of the most looking for a job in 2016 to 2019 and the first time looking for a job is 19,44%.

The classification that has been done in finding a job is useful to see what effective media efforts in a job search. Here, there are several alternatives which chosen by the respondent to apply for a job, including through the registration at the manpower office, contacting the companies or government offices, through advertisement, acquaintances, etc. Contacting acquaintances were the most chosen media where it is 30,56%. The reason for inappropriate and low salaries are the reasons that most chosen by the respondent to leave the job that is 55,56%. Now, the work which done by the job seekers is not working (unemployed) that is 52,78% and 27,78% for full time, and only 1,44% are working part-time. The reason why respondents are currently looking for a part-time job (53,77%) is to add their income, and the other 25% is for family responsibilities. The average of the respondent in getting job less than 2 years is 77,78% and more than 2 years is 22,22%.

Aspects that Affect Unemployment

From the aspect of the population as the result of interviews with respondents, it is obtained the following data.

**Table 6 Job Seekers' Response Concerning the Effect of
Population Aspect on Unemployment in Jambi City**

Numb.	Population	1*	2*	3*	4*	5*	Total
1	High Productive Age	1	1	11	16	7	36
	%	2,78	2,78	30,56	4,44	19,44	100,00
2	Low education level	-	2	5	24	5	36
	%	-	5,56	13,89	66,67	13,89	100,00
3	High Migration Incoming	-	3	15	14	4	36
	%	-	8,33	41,67	38,89	11,11	100,00
4	Low Human Resources	1	1	12	17	5	36
	%	2,78	2,78	33,33	47,22	1,89	100,00

Source : Primary Data Process, 2019

Information :

1* = Strongly Disagree; 2* = Disagree; 3* = Less Agree; 4* = Agree; 5* = Strongly Agree.

Based on the table of the influence of high productive age, the respondents that said agree is 50,0% hypothetically effect to reduce the numbers of unemployment. 27,8 % stated strongly agree and 19,4% stated less agree. About the low of education can increase unemployment, those who stated agree is 66,7% and then those who stated strongly agree and less agree are in the same equal which is 13,9%. The influence of high migration incoming can increase the unemployment as 41,7% of the respondent that stated less agree, then followed by those who 38,9% agree, 11,1% strongly agree. On the low quality of human resources who agree can increase the 47,2% of unemployment and 13,9% for strongly agree, but there are 33,3% who disagree with that influence. From the analysis above, it can be concluded that the differences between the group of agreeing and disagree is not significant, although it is still dominated by the group of agree. The difference of this perception is based on the respondents' academic ability and insight.

The stable economic condition will encourage the expansion of employment opportunities and have the ability to absorb the workforce and reduce the national unemployment rate. Hypothetically, there is a relationship between employment opportunities and productive age, human resources, outsourcing, and mismatch. To see the perception of job seekers' respondents about the aspects of employment affecting unemployment, it can be seen from the table below.

**Table 7 Job Seekers' Response Concerning The Effect of Employment Opportunities
on Unemployment in Jambi City**

Numb.	Employment Opportunity	1*	2*	3*	4*	5*	Total
1	High Productive Age	1	-	7	18	10	36
	%	2,78	-	19,44	50,00	27,78	100,00
2	Low Human Resources	2	4	9	20	1	36
	%	5,6	11,11	25,00	55,56	2,78	100,00
3	Outsourcing	-	1	14	20	1	36
	%	-	2,78	38,89	55,56	2,78	100,00
4	Missmatch		2	16	11	7	36
	%	-	5,56	44,44	30,56	19,44	100,00

Source : Primary Data Processed, 2019

Information :

1* = Strongly Disagree; 2* = Disagree; 3* = Less Agree; 4* = Agree; 5* = Strongly Agree

The table above shows that there are various responses of job seeker about the aspects of employment affecting unemployment. On the influence of high productive age, the most responses that stated agree is 50,0% and hypothetically, this influence to reduce the unemployment rate. Then, those who stated strongly agree was 27,8 % ad less agree was 19,4%, but there still 2,8% that stated strongly disagree.

On the low quality of human resources that respond agree can reduce the employment opportunities and increase the 55,6% of unemployment, and 2,8% of strongly disagree, but those who less agree on that influence was 25,0%, and the rest each showed 5,56% strongly disagreed and 11,1% disagreed. Furthermore, the outsourcing increase 55,6% of unemployment stated agree, 2,78% stated strongly agree, 38,9% stated less agree. The influence of mismatch can increase the unemployment is 44,4% respondents stated less agree, then 30,6% stated agree, 19,4% stated strongly disagree and 5,6% stated disagree.

From the result of secondary data, it showed that the economic growth, education level, and population growth affect the unemployment in regencies/cities in Jambi Province, whereas from the field study of population variable and job opportunity were the factors that affect unemployment.

Conclusions

The economic growth in Jambi Province from 2012 to 2017 was 5,85%. Based on the growth of regencies/cities, the highest economic growth was 7,15% in Sungai Penuh and the lowest was 3,48 in East Tanjung Jabung Regency. The highest education level of the regencies/cities during the research in Jambi Province was 10,65 years, and the lowest was 6,33 years in East Tanjung Jabung, whereas the average of Jambi Province was 8,15 year. The highest of population growth in regencies/cities was in Muaro Jambi regency (2,86%), and the lowest was in East Tanjung Jabung (0,73%), whereas the average in Jambi Province in the same year was 1,74%. For the highest unemployment rate in Sungai Penuh City was 7,31% and the lowest was East Tanjung Jabung as 2,26%, while the average of Jambi Province during the research period was 51,6%.

The results of panel data regression through REM method showed that the unemployment rate in Jambi Province was simultaneously affected by the economic growth, education level. And population growth. Partially, Sungai Penuh City will get the highest impact from the 0,691273 of unemployment rate, while Tebo regency will get the smallest impact as 0,080123 from regencies/cities in Jambi Province.

From the aspects that affect unemployment, there were 30,56% stated agree for the high productive age, 66,67% agree for low education level and 41,6% as the impact of incoming migration. In terms of employment, there were 50,00% stated agree, as the impact of low human resources was 55,56% stated agree because of 55,56% of termination of employment said to agree, and also 44,44% said disagree for the mismatch.

There is still a high level of unemployment in regencies/cities in Jambi Province that makes it needs a policy that addresses to solve the problem especially that relate to efforts to improve the economic growth, education level and population growth in regencies/ cities in Jambi Province. Based on the survey, it is necessary to increase the education level and the decreasing number of productive age through the rate of population growth.

It needs further research by considering the factors affecting the unemployment in regencies/cities in Jambi Province by adding variables, modifying the model used and multiplying the number of interviewed respondents.

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