The Linkage of Employment to Poverty in Central Java

Sartika Andari Murti, Robert Kurniawan

Abstract
In 2017, Central Java was the second largest contributor to the GDP in Java but still has poverty and employment problems. In this research, wellbeing can approach with per capita expenditure. Empirically per capita expenditure has spatial relevance. This study aims to determine the relationship between employment indicators and the spending spatially in Central Java. The variables used are expenditure, labor force participation, labor productivity, minimum wage of regency/city, and the average length of the school. The analytical method used to determine the relationship is spatial panel regression with the Spatial Error Model fixed effect. The results obtained are labor force participation, labor productivity, minimum wage of regency/city, and the average length of the school, and spatial error dependencies have a significant positive effect on expenditure. Suggestions proposed are to increase employment through investments, especially in education, and to increase cooperation between regencies/cities in poverty alleviation efforts.

Keywords: poverty, employment, spatial panel

How to Cite:
Murti, S. A., & Kurniawan, R. (2020). The Linkage of Employment to Poverty in Central Java. Signifikans: Jurnal Ilmu Ekonomi, 9(2), 195-206. doi: http://doi.org/10.15408/sjie.v9i2.14466.
Introduction

Poverty is a crucial problem in the development process in all countries, including Indonesia (Yuniarto & Kurniawan, 2017). Todaro (2006) explains that the issue of poverty alleviation is essential in every existing development process. Poverty is closely related to the economic conditions of a region. According to BPS (2018), in 2017, Java Island was the most significant contributor, contributing 58.49% to Indonesia’s total GDP. However, provinces in Java are still experiencing poverty problems because there are still three provinces with a percentage of sparse populations above the national rate.

In 2017, Central Java Province was the second largest contributor but had a higher percentage of sparse population compared to East Java Province, which had a higher population (Figure 1). According to on BPS data (2018), if you look at the GDP growth, Central Java Province shows an increase from 2010-2017, so it supports that the province’s economic condition is already good. Although the percentage of the sparse population in Central Java Province has decreased, the rate of decline has slowed from 2010-2017.

Figure 1. Percentage of sparse population and contribution of GDP to the provincial GDP in Java at 2017

Source: BPS, processed

Figure 1 shows three provinces with the highest percentage of poor populations, such as East Java Province, Central Java Province, and DI Yogyakarta Province. According to BPS (2019), in 2017, the three provinces have the same employment conditions, namely having the number of Open Unemployment Rate, which is below the Indonesian rate. Central Java Province has a percentage of the reduced and Open Unemployment Rate are above the two provinces. However, the economic condition of Central Java Province is better than the two regions if seen from the contribution to GDP in Java. It indicates that there are labor and poverty problems in Central Java Province.

The other labor indicator used by BPS is the labor force participation rate. Tegal, one of the cities in Central Java Province, experienced the most considerable fluctuations with a significant decrease in 2012 and 2015. The labor participation rate in Tegal decreased from 70.35 percent (2011) to 63.40 percent in (2012); and in 2014, it was 70.97 percent down
to 65.09 percent in 2015. The decline that occurred was almost close to the same value of around 6 percent. It means that 6 percent of the entire working-age population in Tegal, which is already active in existing economic activities is declining.

BPS data shows that the labor productivity rate in Central Java Province describes how large the inequality labor condition between regencies in Central Java province. In 2017, regency with the highest labor productivity was Kudus Regency amounting to 151.51 million rupiahs/person, and the difference between the lowest and highest labor productivity rate reached 127.19 million rupiahs/person in 2017.

In Central Java Province, an increase in the number of workers caused employment problems, but the level of labor force participation did not follow the rise. In 2017, there were 16 regencies/cities that experienced a decline in labor productivity, and 13 regencies/cities experienced an increase in open unemployment. It raises to make the hypothesis that there are problems with poverty reduction that have not yet resolved, one of them due to existing labor problems.

Borjas (2016) explains that one solution to decrease poverty is increasing the welfare of the residents. Stiglitz (2011) argued that per capita income or expenditure per capita is more appropriate to describe the actual condition of population welfare than GDP or economic growth when there is no significant imbalance. The better indicator that represents welfare is an expenditure, so if spending rise at some point, consumer purchasing power is increasing too and follows by better wellbeing. It can conclude that this research use expenditure as a welfare approach and how to decrease poverty can answer as to how to increase spending as a welfare approach.

Hyman & Farrow (2005) argued that everything about poverty tends to be grouped in an area with specific regional characteristics. That theory gives a hypothesis that the solution of poverty has that tendency as a spatial effect too. So this research uses spatial impact as one indicator to choose the method. Puspitasari (2017) explains in her research in Central Java Province in 2012-2016 by using the weighing queen contiguity and spatial effect model with fixed effects, the results showed that per capita expenditure hurts the percentage of poverty.

Muklis (2012) and Ensor et al. (2020) supports the variable per capita expenditure per household month as an indicator of poverty and obtains the results that the dependency ratio variable and the work sector of household heads on agriculture significantly negatively affect household per capita expenditure. The labor sector is one of the channels that affect the poor (Addison & Demery, 1993; Alisjahbana & Manning, 2006; Barbieri & Bozzon, 2016).

The differences this research with other previous research are using expenditure as a welfare approach as the dependent variable to overcome poverty indirectly. This research focuses on the labor market that uses a quality of output and input on the labor market as the priority variable to affect the expenditure. This research pays attention to spatial expenditure effect to accommodate the influence between region. So the purpose of this study was to discover the impact between expenditure as welfare approach and employment indicators in Central Java Province with spatial effects to decrease poverty as the goal of increasing welfare.
On the other hand, this research’s contribution is proving that the labor problem as the priority sector to decrease poverty by increasing the welfare of labor. So, the government can focus more on the labor sector to prevent poverty and improve the coordination between the region in Central Java Province to decrease debt by increasing expenditure as a welfare approach.

Methods

This research covers all regencies/cities in Central Java Province consist of 29 regencies and six towns. Because of the availability of data, the period of this research is 2010 to 2017. This research analyzes the variables that affect the expenditure as a welfare approach. Variables that influence the spending are labor force participation rates, regency/city minimum wages, labor productivity, and the average length of the school. The data used are secondary data sourced from BPS during 2010-2017 for each regency/city in Central Java Province.

The analytical method used to explain the influence between a dependent variable and independent variables with spatial effect. Fitriani (2012) explains that queen contiguity is a better weighting to describe the spatial impact of poverty and welfare in Central Java Province. The cause of poverty between adjacent regions is the economic interaction, and this weigher can capture more neighbors. With geographical conditions that indicate the ease of access between regencies/cities, it expects that whole economic interaction between neighboring regions can capture through this weigher. The method is spatial panel data regression with queen contiguity as weighting. This research using QGIS as a statistic application to explain the spatial effect. The specifications of the spatial model used in this research can generally write as follows:

$$Y_{it} = \lambda \sum_{j=1}^{35} w_{ij} Y_{jt} + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \mu_i + u_{it}$$

$$u_{it} = \rho \sum_{j=1}^{35} w_{ij} u_{jt} + \epsilon_{it}$$

$Y_{it}$ as ln average per capita expenditure of $i$ district/city on $t$ year (rupiah), $X_{1it}$ as ln labor force participation rate of $i$ district/city on $t$ year (percent), $X_{2it}$ as ln labor productivity of $i$ district/city on $t$ year (million rupiahs/person), $X_{3it}$ as ln minimum wage of $i$ district/city on $t$ year (rupiah), $X_{4it}$ as ln average length of the school of $i$ district/city on $t$ year (year), $\lambda$ as the autoregressive spatial lag of average per capita expenditure, $\rho$ as the coefficient of spatial autocorrelation error, $\beta_1, \beta_2, \beta_3, \beta_4$ as regression coefficient for each independent variable (slope), $\mu_i$ as a specific effect spatial of $i$ district/city, $\epsilon_{it}$ as the error of $i$ district/city on $t$ year, $w_{ij}$ as the spatial weighting observation of $i$ row and $j$ column, $u_{it}$ as the observation spatial error autocorrelation of $i$ observation and $t$ time, $i$ as the observation unit (Cilacap district, Banyumas District, ..., Tegal city) or (1,2,...,35), and $t$ as units of time (2010, 2011, ..., 2017).

Elhorst (2014) explains that in the general modeling above, there are several possibilities for the spatial economic model, namely non-spatial panel models (without
spatial effects). If $\lambda = 0$ and $\rho = 0$ Spatial Lag panel model (Spatial Autoregressive Model), if $\lambda \neq 0$ and $\rho = 0$, Spatial Error panel model (Spatial Error Model), if $\lambda = 0$ and $\rho \neq 0$, and Spatial Lag and Spatial Error panel model, if $\lambda \neq 0$ and $\rho \neq 0$.

**Result and Discussion**

Modeling results without spatial effects shows in Table 1, which explains that for the F test as a simultaneous test, it is statistically significant because of p-value ≤ $\alpha$ where $\alpha=0.05$. It means that variables of labor force participation, labor productivity, regency/city minimum wages, and the average length of school as independent variables significantly influence the expenditure. The adjusted $R^2$ value of the modeling is 0.8327. It shows those whole independent variables can explain 83.27% of the variation in the spending in the model, while independent variables outside the model explain the rest.

| Parameter                        | Estimation Coefficient | p-value (t statistics) | Adjusted $R^2$ | p-value (F statistics) |
|----------------------------------|------------------------|------------------------|----------------|------------------------|
| constanta                         | 1.8038                 | 0.0256 *               |                | < 2.2e-16*             |
| ln(labor force participation)    | 0.0017                 | 0.9915                 |                |                        |
| ln(labor productivity)           | 0.0927                 | 3.54e-05 *             | 0.8305         | < 2.2e-16*             |
| ln(minimum wage of regency/city) | 0.7024                 | < 2e-16*               |                |                        |
| ln(average length of school)     | 0.7231                 | < 2e-16*               |                |                        |

Table 1. Modeling Results without Spatial Effects

The assumption test is done for non-spatial effects modeling. The results obtained are model without spatial effects break the non-autocorrelation assumptions. This result indicates that this model is not the best, so the next step has to test for spatial autocorrelation because the initial hypothesis states that welfare has spatial dimensions. The spatial autocorrelation in the data and error test using Global Moran’s I and Moran’s errors. The result shows that there is spatial autocorrelation both in the expenditure data and the error of the model formed.

We are choosing the econometric model by testing the Lagrange Multiplier Spatial Error and Lagrange Multiplier Spatial Lag. The obtained p-value for Lagrange Multiplier Spatial Error and Lagrange Multiplier Spatial Lag. The result shows that only the Lagrange Multiplier Spatial Error is significant, then there is no need to test the Robust Lagrange Multiplier Spatial Error and Robust Lagrange Multiplier Spatial Lag. These results show that there is only spatial error autocorrelation. It means that the spatial econometric model chosen is Spatial Error Model.

After obtaining the spatial econometric model, the next step is to determine the effects that match the data using the Hausman test. The Hausman test results show p-value < 2.2e-16. It can conclude that the effect specifications that are more appropriate for the model are fixed effects. Elhorst (2014) describes the spatial specific effects in the fixed effect
model that these spatial specific effects can explain the spatial heterogeneity that occurs. The spatial heterogeneity shown is the difference in the dependent variable between regions due to differences in characteristics. If the spatial specific effect is significant, then the area has different characteristics from other regions. The chosen model is the Spatial Error Model fixed effect.

Table 2. Modeling Results of Spatial Error Model Fixed Effect

| Parameter                              | Estimation Coefficient | p-value (t statistics) | adjusted $R^2$ | AIC     |
|----------------------------------------|------------------------|------------------------|----------------|---------|
| Rho ($\rho$)                           | 0.1740                 | 0.02302 *              |                |         |
| Constanta                              | -3.9350                | 1.513e-05 *            |                |         |
| ln(labor force participation)          | 1.3293                 | 2.586e-10 *            |                |         |
| ln(labor productivity)                 | 0.8279                 | 1.609e-09 *            | 0.9340         | -1396.366 |
| ln(minimum wage of regency/city)       | 0.4928                 | < 2.2e-16 *            |                |         |
| ln(average length of school)           | 0.8648                 | 0.0003098 *            |                |         |

Information: * significant at $\alpha=0.05$

From the modeling result following Table 2, it shows that at the 5% significance level, all the independent variables are Labor force participation (X1). Labor productivity (X2). The minimum wage of regency/city (X3). Moreover, the average length of school (X4) is partially significant towards the expenditure (Y). The following equation illustrates the spending based on the results of that modeling are as follows:

$$
\bar{Y}_{it} = (-3.9350 + \bar{u}_i) + 1.3293X_{1it} + 0.8279X_{2it} + 0.4928X_{3it} + 0.8648X_{4it} + 0.1740 \sum_{j=1}^{35} w_{ij}u_{it}
$$

$\bar{u}_i$ as a specific effect spatial of i regency/city, $w_{ij}$ as the spatial weighting observation of i row and j column, $u_{it}$ as the observation spatial error autocorrelation of i observation and t time, i as the observation unit (Cilacap regency. Banyumas regency. .... Tegal city) or (1.2.....35), and t as units of time (2010. 2011. .... 2017).

Table 2 shows the adjusted $R^2$ value for that modeling is 0.9340. It means that all the independent variables can explain 93.40% of the diversity of growth expenditure in the model (growth in labor force participation rates. labor productivity growth. regency/city minimum wage growth. and growth of the average of length school). There are spatial specific effects ($\bar{u}_i$) in this model. Elhorst (2014) explains that the fixed effect model’s spatial specific effects can explain the spatial heterogeneity that occurs. The spatial heterogeneity shown is the difference in the dependent variable between regions due to differences in characteristics. So there are differences among the regency/city about the expenditure in the period 2010-2017.

Because of the high adjusted $R^2$ value, it describes that the labor sector is one of the primary sectors to increase expenditure as a welfare approach. This sector from the
independent variable as the quality of output and input in the labor market can be defined as essential indicators to decrease poverty by the labor market. These results enabled the government to make policies in the labor market. Labor indicators in this research can explain expenditure as a welfare approach to about 93.40%, so this variable is enough to explain how the labor market can increase spending as a welfare approach. Central Java Province society has a problem in the labor market, especially in human capital, as the labor market’s input as education and skill.

Table 2 shows that the variable labor force participation rate significantly affects the expenditure. There is enough evidence to support that labor force participation has a positive and significant effect on expenditure. The unemployment condition has an adverse effect that can reduce a person’s income, which ultimately can reduce his welfare (Djafar & Kurniasih, 2015; Adelowokan et al., 2019; Mohammad & David, 2019). Wahyudi (2013) supports that unemployment can reduce the level of people’s wellbeing. If labor supply increases, the average of asking wage decline and the labor market will indirectly increase demand. This case makes the increasing labor can increase the expenditure as the consumer purchasing power as the welfare approach.

The labor productivity in Table 2 also shows a significant impact on the expenditure. In other words, labor productivity has a positive and significant effect on expenditure. Nurkse (as cited in Rohima, 2013) conveyed a theory of The Vicious Cycle of Poverty that low productivity is the cause of poverty. So, there is a relationship between productivity and poverty (Dalton et al., 2017; Ivanic & Martin, 2018). Wahyudi (2013) supports that unemployment can describe the lower level of labor productivity. The higher labor productivity is a goal of employers and forces job seekers to increase their potency, so they have a higher chance of getting a job in the labor market. Enhancing job seekers’ quality as increasing labor productivity can improve the welfare in their family level and labor market level so poverty can decrease as long as increasing prosperity.

Table 2 also shows that the minimum wage of regency/city significantly influences the expenditure. The welfare of most households depends on the wages earned, and increasing fees would increase people’s income (Widyastuti, 2012; Wahyudi, 2013; Nguyen & Nguyen, 2019). If the poor people have a higher minimum wage, then the chances of fulfilling needs will reduce the risk of becoming poor (Bird & Manning, 2008; Vedder & Gallaway, 2002; MaCurdy, 2015). The minimum wage would improve the economic condition of low-wage workers (Addison & Blackburn, 1999; Devereux, 2005). In other words, since they have more minimum wage than income, they can raise their expenditure as consumer purchasing power as a welfare approach. This case can decrease poverty by increasing revenue.

Table 2 also shows that the average length of school significantly affects the expenditure. Education plays an essential role in describing a country’s ability to absorb modern technology and develop capacity (Todaro, 2006; Gewirtz, 2017). The improvement of educational attainment can reduce the probability of being poor from the individual (Njong, 2010). Tambunan (2006) also explains that the role of education in reducing poverty depends quickly or not on the access of poor people to complete higher education. Murti (2019) also tells that heads of households with low literacy have a greater tendency to be reduced.
The data shows that there is a parallel condition between income and expenditure. In other words, when income increases, then the spending is also increased. It proves from the modeling result in this research that raising the wage as the one kind of salary can increase the expenditure. Increasing expenditure can be analogous to improving welfare because people can buy more needs.

The quality of the labor market can catch from labor productivity and labor force participation. According to the modeling results, two indicators can increase the expenditure as a welfare approach. What signs describe how competitive and productive the labor market is in Central Java Province. Job seekers as supply in the labor market have to be supported by demand labor from enterprise and another employer. This indicator is strongly influenced by the facilities and the quality that the employer-supplied, such as health insurance, skill training, and other facilities that can improve employees’ competence. Increasing these indicators can increasing expenditure in an enterprise as intermediate consumption. However, rising output and rising spending in the household as a society because of increasing income by increasing production in enterprise.

**Tabel 3. The spatial specific effect of SEMFE model**

| Region          | Spatial Fixed Effects (1) | Spatial Fixed Effects (2) | Spatial Fixed Effects (3) | Spatial Fixed Effects (4) |
|-----------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Cilacap         | 0.2803                    |                           |                           | 0.4748                    |
| Banyumas        | 0.1610                    |                           |                           | 0.1410                    |
| Purworejo       | 0.3900                    |                           |                           | 0.0561                    |
| Wonosobo        | -0.7576                   |                           |                           | -0.1333                   |
| Magelang        | 0.2248                    |                           |                           | 0.4297                    |
| Boyolali        | 0.4862                    |                           |                           | 0.1226                    |
| Klaten          | 0.2172                    |                           |                           | 0.2327                    |
| Sukoharjo       | -0.1624                   |                           |                           | 0.3840                    |
| Wonogiri        | 0.2754                    |                           |                           | -0.5354                   |
| Karanganyar     | -0.0880                   |                           |                           | -0.1205                   |
| Sragen          | 0.1113                    |                           |                           | -0.3397                   |
| Grobogan        | -1.1715                   |                           |                           | -0.7991                   |
| Blora           | -0.0053                   |                           |                           | -0.6657                   |
| Rembang         | 0.1161                    |                           |                           | -0.2589                   |
| Pati            | 0.2457                    |                           |                           |                           |
Other indicators are education that describes the human capital in this province. Education, like the one factor of social capital, can be quality input or quality labor in the labor market. Increasing knowledge as input can increase the output from labor productivity and labor force participation because higher education can get a broader range of jobs. Training can improve the skill and competence of labor and give more choice about a job vacancy at another level. Higher education can get higher income because usually, those who have higher education can participate in the formal labor market that has a more comfortable job, insurance, and revenue. So more people that have excellent knowledge can increase their income and expenditure.

Table 3 shows the spatial specific effect of this research. Spatial dependency error (ρ) is also significant at the 5% significance level indicated by p-value, which less than 5%. It shows that the growth of each regency/city’s expenditure in Central Java Province will be affected by errors originating from other regencies/towns as the neighbors. A positive sign on spatial error coefficient confirms that any increase in errors (due to different variables outside the model) in neighboring regencies/cities will increase the average per capita expenditure in the chosen regency/city.

For example, we analyze the spatial errors in the Banyumas Regency. The neighboring regencies/cities are Cilacap Regency, Purbalingga Regency, Banjarregara Regency, Kebumen Regency, Pemalang Regency, Tegal Regency, and Brebes Regency. The spatial specific effect for Banyumas Regency is 0.1610 (Table 3). The equations for Banyumas Regency are as follows:

$$\begin{align*}
    y_{\text{Banyumast}} &= -3.774 + 1.3293x_{\text{Banyumast}} + 0.8279x_{\text{Cilacap}} + 0.4928x_{\text{Purbalingga}} + \\
                        &+ 0.8648x_{\text{Banjarregara}} + 0.0249u_{\text{Kebumen}} + 0.0249u_{\text{Pemalang}} + \\
                        &+ 0.0249u_{\text{Tegal}} + 0.0249u_{\text{Brebes}}
\end{align*}$$

Based on that equation, increasing error in each regency/city that is neighboring Banyumas Regency will increase the expenditure growth of the Banyumas Regency. Any increase in error in Cilacap Regency will increase the expenditure of the Banyumas Regency by 2.49%. When the Cilacap Regency’s economic activities increased with the manufacturing industry sector as a leading sector, this will have an impact on improving the action of the processing industry sector in the Banyumas Regency. It triggers an increase in employment and an increase in labor demand. More people will have jobs and be able to increase income to fulfill their needs, especially basic needs. According to BPS (2016), if the higher their income, the higher their expenditure, especially in non-food spending as resident behavior of Central Java. In other words, expenditure growth in Banyumas Regency will increase. Furthermore, if spending as a welfare approach is growing, the poverty line is getting smaller.

Conclusion

The modeling results show that labor force participation, labor productivity, minimum wages of regency/city, and the average length of school have a positive and significant effect on the 5% of the expenditure. Central Java Province also has a spatial error effect that has a
positive impact. It shows that other variables that not included in the model in neighboring regencies/cities will increase the chosen regency/city expenditure in Central Java Province. The chosen model can explain the variation of expenditure as a welfare approach of about 93.40%. It can conclude that the labor indicator can explain welfare in a better way, and the government can focus on the labor sector to decrease poverty. Increasing prosperity can reduce poverty, so if the whole independent variables in this model increase, then the welfare can improve.

This spatial effect explains that another variable in this model is sensitive to affect the expenditure among the neighboring regency/city. In other words, coordination among regencies/cities has to increase, and the government has to make a strict regulation on how to decrease the poverty for the whole regency/city in Central Java Province. On the other hand, the government can make a policy about increasing the labor market by improving education and demand for employment, and the government should strengthen the coordination between regency/city in purpose to enhance the welfare of labor.

References
Addison, T., & Demery, L. (1993). Labour Markets, Poverty and Adjustment. Journal of International Development, 5(2), 135-143. https://doi.org/10.1002/jid.3380050205.
Addison, J. T., & Blackburn, M. (1999). Minimum Wages and Poverty. ILR Review, 52(3), 393-409. https://doi.org/10.1177/001979399905200302.
Adelowokan, O. A., Babasanya, A. O., Maku, O. M., & Adesoye, A. B. (2019). Unemployment, Poverty, and Economic Growth in Nigeria. Journal of Economics and Management, 35(1), 5-17. https://doi.org/10.22367/jem.2019.35.01.
Alisjahbana, A. S., & Manning, C. (2006). Labour Market Dimensions of Poverty in Indonesia. Bulletin of Indonesian Economic Studies, 42(2), 235-261. https://doi.org/10.1080/00074910600873674.
Barbieri, P., & Bozzon, R. (2016). Welfare, Labour Market Deregulation and Households’ Poverty Risks: an Analysis of the Risk of Entering Poverty at Childbirth in Different European Welfare Clusters. Journal of European Social Policy, 26(2), 99-123. https://doi.org/10.1177/0958928716633044.
Bhargava, A., Franzini, L., & Narendranathan, W. (1982). Serial Correlation And The Fixed Effects Model. The Review Of Economic Studies, 49(4), 533-549.
Bird, K., & Manning, C. (2008). Minimum Wages and Poverty in a Developing Country: Simulations from Indonesia’s Household Survey. World Development, 36(5), 916-933. https://doi.org/10.1016/j.worlddev.2007.05.012.
Borjas, G. J. (2016). Does Welfare Reduce Poverty. Research in Economics, 70 (1), 143-157. https://doi.org/10.1016/j.rie.2015.11.002.
Breusch, T.S., & Pagan, A.R. (1979). A Simple Test For Heteroscedasticity And Random Coefficient Variation. Econometrica: Journal Of The Econometric Society, 47(5), 1287-1294.
Dalton, P. S., Gonzalez, J. V. H., & Noussair, C. N. (2017). Exposure to Poverty and Productivity. *PloS ONE, 12*(1), e0170231. https://doi.org/10.1371/journal.pone.0170231.

Devereux, S. (2005). Can Minimum Wages Contribute to Poverty Reduction in Poor Countries? *Journal of International Development, 17*(7), 899-912. https://doi.org/10.1002/jid.1183.

Djafar, F., & Kurniasih, E. O. (2015). Unemployment, Poverty, and Indonesian Overseas Workers. *Asian Journal for Poverty Studies, 1*(1), 30-33. https://doi.org/10.33369/ajps.v1i1.967.

Elhorst, J. P. (2014). *Spatial Econometrics From Cross-Sectional Data To Spatial Panels*. Jerman: Springer.

Ensor, T., Bhattarai, R., Manandhar, S., Poudel, A. N., Dhungel, R., Baral, S., Hicks, J. P., Thomson, D., & Elsey, H. (2020). From Rags to Riches: Assessing Poverty and Vulnerability in Urban Nepal. *PloS One, 15*(2), e0226646. https://doi.org/10.1371/journal.pone.0226646.

Fidiani, A. (2012). Analisis Spasial Data Panel Pada Rata-Rata Pengeluaran Per Kapita Jawa Barat Dengan Matriks Queen Contiguity dan Akses Jalan (Spatial Analysis of Panel Data on Average Expenditures Per Capita in West Java Using the Queen Contiguity Matrix and Road Access). *(Unpublished Thesis)*. IPB University.

Gewirtz, S. (2017). Rethinking Education and Poverty. *British Journal of Sociology of Education, 38*(7), 1081-1088. https://doi.org/10.1080/01425692.2017.1349654.

Hyman, G. & Farrow, A. (2005). *Poverty Mapping: Geographic Distribution of Poor*. Ecuador: CIAT.

Ivanic, M., & Martin, W. (2018). Sectoral Productivity Growth and Poverty Reduction: National and Global Impacts. *World Development, 109*, 429-439. https://doi.org/10.1016/j.worlddev.2017.07.004.

MaCurdy, T. (2015). How Effective is the Minimum Wage at Supporting the Poor? *Journal of Political Economy, 123*(2), 497-545. https://doi.org/10.1086/679626.

Mohammad, U. F., & David, J. (2019). The Relationship Between Poverty and Unemployment in Niger State. *Signifikan: Jurnal Ilmu Ekonomi, 8*(1), 71-78. https://doi.org/10.15408/sjie.v8i1.6725.

Muklis, D. (2012). Faktor-Faktor Yang Mempengaruhi Pengeluaran Perkapita Perbulan Rumah Tangga Sebagai Indikator Kemiskinan Rumah Tangga Di Kabupaten Maerauke Tahun 2011 (Factors That Influence Monthly Per capita Household Expenditure as Indicator of Household Poverty in Maerauke Regency in 2011). *(Unpublished Thesis)*. Politeknik Statistika STIS.

Murti, S.A. & Kurniawan, R. (2019). Analisis Kecenderungan Sosio-Demografi pada Kemiskinan Multidimensi di Provinsi Bengkulu Tahun 2015. *Konferensi Nasional Penelitian Matematika dan Pembelajarannya IV, 26*(1), 9.

Nguyen, H. M., & Nguyen, T. A. (2019). Investigating the Determinants of Household Welfare in the Central Highland, Vietnam. *Cogent Economics & Finance, 7*(1), a1684179. https://doi.org/10.1080/23322039.2019.1684179.
Njong, A. M. (2010). The Effects of Educational Attainment on Poverty Reduction in Cameroon. *Journal of Education Administration and Policy Studies, 2*(1), 1-8. https://doi.org/10.5897/JEAPS10.058.

Puspitasari, D. (2017). Determinan Kemiskinan di Jawa Tengah Tahun 2012-2016: Regresi Data Panel Spasial (Determinants of Poverty in Central Java 2012-2016: Spatial Panel Data Regression). *Unpublished Thesis*. Politeknik Statistika STIS.

Rohima, S. (2013). Vicious Circle Analysis of Poverty and Entrepreneurship. *Journal Of Bussines And Management (IOSR-JBM), 7*(1), 6-8.

Stiglitz, J. E. (2011). Rethinking Development Economics. *The Wolrd Bank Observer, 26*(2), 230-236. https://doi.org/10.1093/wbro/lkr011.

Tambunan, T. (2006). *Perekonomian Indonesia Sejak Orde Lama Hingga Pasca Krisis (Indonesian Economy Since the Old Order Until Post-Crisis)*. Jakarta: Pustaka Quantum.

Todaro, M. P. & Smith, S. C. (2006). *Pembangunan Ekonomi (Economic Development)*. Jakarta: Erlangga.

Vedder, R., & Gallaway, L. (2002). The Minimum Wage and Poverty Among Full-Time Workers. *Journal of Labor Research, 23*, 41-49. https://doi.org/10.1007/s12122-002-1016-4.

Wahyudi, D. (2013). Analisis Kemiskinan Di Jawa Tengah (The Poverty Analysis in Central Java). *Diponegoro Journal Of Economics, 2*(1), 1-5.

Widyastuti, A. (2012). Analisis Hubungan Antara Produktivitas Pekerja dan Tingkat Pendidikan Pekerja Terhadap Kesejahteraan Keluarga di Jawa Tengah 2009 (Analysis of the Relationship Between Worker Productivity and Worker Education Levels Against Family Welfare in Central Java 2009). *Economics Development Analysis Journal, 3*(2), 1-11.

Yuniarto, B & Kurniawan, R. (2017). Understanding Structure Of Poverty Dimensions In East Java: Bicluster Approach. *Signifikan: Jurnal Ilmu Ekonomi, 6*(2), 289-300. https://doi.org/10.15408/sjie.v6i2.4769.