Does The Minimum Wage Policy Have an Effect on Welfare? (Case Study in West Java Province)

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Abstract. This study focuses on analyzing the role of minimum wages, productivity levels, and the human development index on people's welfare. The locus of this study is the districts/cities in West Java province with an analysis period from 2015-2021 using the panel data regression analysis method. The results of the analysis found that in fact, the minimum wage has a negative impact on the level of welfare. On the other hand, a high level of productivity has a positive influence on the level of welfare. Increases in productivity lead to the creation of new jobs and increases in individual incomes, with a positive impact on people's living standards. In addition, the results of the study found that the human development index has a positive impact on the level of welfare. Simultaneously the minimum wage, productivity level, and human development index have a significant influence on the level of welfare.

Keywords: Welfare, Minimum Wage, Productivity, Human Development Index, Panel Data Analysis.

1 Introduction

The province of West Java boasts the highest population in Indonesia, so the implementation of the minimum wage policy in West Java Province every year has a strong impact on the survival of workers and their families and contributes to achieving a prosperous life for society as a whole. This minimum wage policy is one of the instruments to improve people's welfare. Community welfare can be defined as a condition that reflects the living conditions of the community, which can be observed from their standard of living. Community welfare can be achieved when basic needs are met, starting from livable housing, clothing, food, education, and health [1].

The measure that is commonly used to measure the level of welfare and adequate living standards in the community is expenditure per capita. Per capita expenditure can be in the form of total spending made by households in buying various types of needs in a certain period of time. Welfare also emphasizes the importance of per capita spending as an important indicator

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to measure people's welfare as a sign of progress and increasing living standards of the population [2].

Table 1. Expenditures per capita, provinces in Java

Province	Year (Thousand Rupiah/Person/Year)		
	2019	**2020**	**2021**
DKI Jakarta	18.527	18.227	18.520
Banten	12.267	11.964	12.033
West Java	11.152	10.845	10.934
DI Yogyakarta	14.394	14.015	14.111
Central Java	11.102	10.930	11.034
East Java	11.739	11.601	11.707
Java Islands	**13.197**	**12.930**	**13.057**

Source : Indonesian Central Bureau of Statistics (BPS)

Table 1 indicates that per capita expenditure for each province on the island of Java decreased in 2020 and then increased again in 2021. Per capita expenditure of West Java Province is in the second lowest position compared to other provinces in Java Island in 2019 with a nominal 11,152 thousand rupiah after Central Java. This decline continues until 2021 when West Java Province is in the lowest first position with per capita spending per year for 2020 and 2021. This indicates that West Java Province has relatively lower social welfare conditions when compared to other provinces on Java Island. This is evidenced by the per capita expenditure of West Java Province which is still below the average per capita expenditure of Java Island.

Even though the minimum wage in West Java Province has increased every year when compared to other provinces in Java Island, West Java Province is in the fourth lowest minimum wage position from 2019–2020. This decline will continue until 2021 when the minimum wage for West Java Province occupies the third lowest position after DI Yogyakarta and Central Java. With this figure, someone with an income in the range of the minimum wage will tend to have difficulty bearing consumption expenses other than for themselves.

From Graph 1, it is evident that there is a correlation between minimum wage and welfare levels. The relatively high minimum wage provides workers with a better income. With greater income, workers have higher purchasing power to meet household needs which will ultimately have a positive impact on per capita spending. Research [3] also shows that the minimum wage affects welfare.

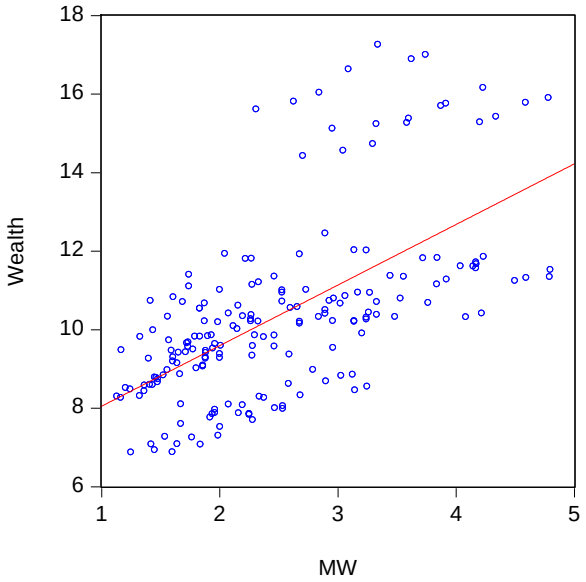

Figure 1. Scatter Plot Wealth and Minimum Wage in West Java

Source : Indonesian Central Bureau of Statistics (BPS)

Income is one of the determining factors for consumption and expenditure. The higher the income a person earns, the higher the spending used for consumption. The size of the income received by a household can provide an overview of the welfare of a community. This is because when the level of income increases, the ability of households to buy various consumption needs becomes greater, even encouraging a consumptive lifestyle [4].

Minimum wage policy theory explains that setting a decent minimum wage can increase workers' purchasing power, thereby increasing per capita expenditure. The amount of household expenditure depends on the level of income generated by the people in the household [5].

In addition to the minimum wage, the relationship between the Human Development Index (HDI) and social welfare is thought to have a close relationship because human development is a development concept that focuses on education, health, and purchasing power [6]–[9]. HDI is an indicator that reflects the level of development and quality of life of a society. A better level of quality of life can be measured from a high HDI, a high HDI can influence people's consumption patterns and encourage higher expenditure per capita. In general, human capital has a positive influence on people's welfare [10]. For example, people with a higher HDI tend to have higher per capita income, which in turn can improve people's welfare overall with higher per capita spending.

In order to increase per capita spending, another important variable is the level of labor productivity, where labor productivity is massively contributed by activities in the manufacturing industry sector. The manufacturing sector in Indonesia is exhibiting more inclusive growth, as indicated by the rising involvement of micro and small businesses, particularly in terms of the number of enterprises and the workforce they employ [11]. The relationship between labor productivity and people's welfare is very close because the level of

labor productivity affects the economic performance of a country or region to create income and welfare for its inhabitants, which in turn can affect people's welfare. Labor productivity has a key role in the theory of economic growth. The effect of employee productivity on home welfare can increase the standard of living of the workforce itself and the welfare of their families [12]. High labor productivity also means workers can produce more goods and services in a unit of time. With an increase in income per worker, it has the potential to increase expenditure per capita.

Minimum wages, human development index, and labor productivity are important factors in improving people's welfare. These three factors play a major role in creating social welfare, in this case per capita expenditure. If these three factors are successfully increased, it is likely that there will be an increase in per capita spending and social welfare. Therefore the primary objective of this study is to analyze the role of minimum wage regulations, HDI, and labor productivity in improving people's welfare, especially in West Java Province.

2 Literature Review

The amount of wages received by a household can describe the welfare of a society. A person's income is one of the factors that has a large influence on expenditure consumption activities, it's because spending tends to rise alongside income. When a person's earnings increase, so does their expenditure on consumption. Even though the prices for each region are not the same, differences in household spending can still indicate economic disparities among regions and their impact on the overall welfare of the population. Previous research [2] research objective is to find out the factors that influence household spending in East Java, the results show that income has a significant influence on household spending in East Java. The greater a person's income, the greater the level of consumption, as well as the welfare of the people is getting higher.

Discussions on minimum wages and their impact on welfare levels have become an interesting topic in regional employment and economic policies. [13] in his research found that the minimum wage policy in Germany has a negative effect on employment, besides that the minimum wage policy can reduce the number of recipients of work welfare from the state because there are indications that some of these beneficiaries prefer to work with a higher minimum wage policy than subsidies. given by the government.

Other literature [3] in his research aims to see the effect of the minimum wage on people's welfare, showing the results of his analysis that the minimum wage affects welfare in Central Java, so when there is a policy of changing the minimum wage policy it will affect the welfare of workers.

Other research [10] aims to examine whether human capital plays a vital role in determining economic well-being in ASEAN nations, the results show that in general human capital has a significant effect on welfare. Mankiw also reminded us of the importance of investment in development, not only physical capital but also human capital which includes education and health [14]. In research [15] investigated the moderating influence of human capital on the relationship between globalization and welfare in developing countries also reveals that

globalization reduces poverty and it suggests that the expansion of human capital in developing countries can lead to enhanced welfare.

Research [12] identifying the impact of female labor productivity on household welfare shows that production results are determined by the productivity of the workforce owned, the results of this production will later increase the standard of living of the workforce. This is because labor productivity and high employment can contribute to improving people's welfare. When the workforce is more productive, as a result, they have the capacity to manufacture an increased number of products and services. in a more efficient time to improve people's living standards.

Table 2. Review of previous research

Authors	Variable	Method	Finding
Virginanda, R. R. (2015)	*Minimum Wage Wealth*	*Canonical Correlation*	*Minimum Wage + Wealth*
Akrom, H. M. (2020)	*Income Household Expenditure*	*OLS*	*Income + Household Expenditure*
Wibowo, M. G. (2019)	*Human capital Welfare*	*OLS*	*Human capital + Welfare*
Olagunju, K.O., Ogunniyi, A.I., Oguntegbe, K.F., Raji, I O., & Ogundari, K. (2019)	*Human Capital Welfare*	*System Generalized Method of Moments (SGMM)*	*Human capital + Welfare*
Nurfatimah, A. (2014)	*Labor Productivity Welfare*	*Panel Data*	*Labor Productivity _+ Welfare*
Schmitz, S. (2017)	*Wage Employment Welfare*	*difference-in-differences (DID)*	*Wage - Welfare*

3 Method

This research tries to analyze the role of the minimum wage policy on people's welfare in districts/cities in West Java Province during the 2015-2021 period. The districts/cities in West Java that became the locus of analysis consisted of 9 cities and 18 regencies, so the appropriate analysis model to use was panel data analysis. The focus of the analysis in this study is to investigate the role of the minimum wage on welfare, but apart from that research is also being developed to analyze the role of productivity and the human development index on welfare. The model in this study is in line with the model developed by [13], [16]–[18]. The models in this study are as follows:

$$Wl_{it} = \beta_1 + \beta_2.MW_{it} + \beta_3.Pr_{it} + \beta_4.HDI_{it} + \varepsilon_{it} \quad (1)$$

Where Wl is the level of community welfare with data sourced from the West Java Provincial Government, MW is a minimum wage policy determined by data sourced from the central statistics agency, Pr is the level of labor productivity with data sourced from the West Java Provincial Government, HDI refers on the human development index indicator with data sourced from the West Java Provincial Government, ε is the error term. Meanwhile, i is a cross

section of 27 regencies/cities in West Java Province, and t is a time series for the 2015-2021 analysis period. Based on the model formulated in this study, detailed information about the variables is described in the following table.

Table 3. Description Variables

Variable	Role	Description	Measure	Data Reseources
Welfare (Wl)	Dependent Variable	The level of community welfare in this study uses per capita expenditure which describes people's purchasing power.	Million Rupiah/Person/ Year	West Java Provincial Government
Minimum Wage (MW)	Independent Variable	The minimum wage is the lowest wage rate for each month determined in each Regency/City	Million Rupiah/ Month	Central Bureau of Statistics
Level of Labor Productivity (Pr)	Control Variable	Productivity level is a description of labor productivity as measured by the ratio between GRDP and the number of workers employed	Million Rupiah/Person/ Year	Central Bureau of Statistics
Human Development Index (HDI)	Control Variable	The Human Development Index serves as a metric to illustrate the access of individuals to development outcomes related to income, health, and education.	Index	West Java Provincial Government

The model used is panel data analysis, so several stages of testing are needed in this study. In the first stage, to get the right model, a model selection test was carried out through the Chow test and Hausman test. Furthermore, to obtain the best linear unbias estimation (BLUE) estimation results, it is necessary to carry out multicollinearity and heteroscedasticity tests [19]–[22].

4 Result

Panel Data Model Selection

To begin the analysis, we perform the Chow test, which helps in deciding whether the model should incorporate a fixed effect or a common effect. In the Chow test analysis, it was found that the Chi-square probability cross section value was less than 0.05, so the correct model to use in this study was the fixed effect model.

Table 4. Chow test results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	186.152373	(26,159)	0.0000
Cross-section Chi-square	651.687367	26	0.0000

***Source**: Results of Research Analysis*

If the previous test used a fixed effect model, then The Hausman test was executed to select the most suitable model, either the fixed effect or the random effect model. In the Hausman test analysis, it was found that the probability cross section value was less than 0.05, so the correct model to use in research was the fixed effect model.

Table 5. Hausman test results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	33.293055	3	0.0000

Source: Results of Research Analysis

Table 6. Regression result using fixed effect model

Variable	Coefficient
C	-2.303450
LOG(MW?)	-0.126808***
LOG(PRODUCTIVITY?)	0.104584***
HDI?	0.060976***
Fixed Effects (Cross)	
BANDUNG--C	-0.040942
BANDUNGBARAT--C	0.037101
BEKASI--C	-0.116352
BOGOR--C	0.098904
CIAMIS--C	-0.061731
CIANJUR--C	0.148189
CIREBON--C	0.173136
GARUT--C	0.041514
INDRAMAYU--C	0.145444
KARAWANG--C	0.101433
KOTABANDUNG--C	-0.216754
KOTABANJAR--C	-0.021664
KOTABEKASI--C	-0.116614
KOTABOGOR--C	-0.157445
KOTACIMAHI--C	-0.289614
KOTACIREBON--C	-0.215959
KOTADEPOK--C	-0.115922
KOTASUKABUMI--C	-0.158334
KOTATASIKMALAYA--C	-0.130024
KUNINGAN--C	0.022016
MAJALENGKA--C	0.158900
PANGANDARAN--C	0.076119
PURWAKARTA--C	0.132653
SUBANG--C	0.239024
SUKABUMI--C	0.144565
SUMEDANG--C	0.016740
TASIKMALAYA--C	0.105616
R-squared	0.996269
Adjusted R-squared	0.995588
F-statistic	1463.952***
Prob(F-statistic)	0.000000
∗ p < 0.10, ∗∗ p < 0.05, ∗∗∗ p < 0.01	

***Source**: Results of Research Analysis*

Based on the estimation results of the Chow test and Hausman test which were previously carried out, the best model was chosen, namely the Fixed Effect Model (FEM), so the regression results were obtained as follows.

Based on the results of the analysis using the fixed effect model, the following regression equation is obtained:

$$LogWl_{it} = -2.30 - 0.12\ LogMW_{it} + 0.10\ LogPr_{it} + 0.06\ HDI_{it} + \varepsilon_{it} \quad (2)$$

A constant of -2.30 explains that if the minimum wage, productivity level and human development index are 0, then the welfare level is -2.30%. The minimum wage coefficient (MW) on the welfare level (WI) is -0.12 with a probability value of 0.000 (0.000 <0.05). So the minimum wage has a negative and significant effect on the level of welfare. The coefficient of productivity level (Pr) to the level of welfare (WI) is 0.10 with a probability value of 0.000 (0.000 <0.05). So the level of productivity on the level of welfare has a positive and significant effect. The coefficient of human development index (HDI) on the level of welfare (WI) is 0.06 with a probability value of 0.000 (0.000 < 0.05). So the human development index on the level of welfare has a positive and significant effect.

Multicollinearity Check

To ensure that the results of the regression analysis are unbiased, it is necessary to perform a multicollinearity test which aims to detect symptoms of correlation of the independent variables. The results of the multicollinearity test in table 9 show that the Centered VIF value is <9, so there is no multicollinearity problem for all variables.

Table 7. Multicolinearity check

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.010232	272.3138	NA
LOG(MW)	0.000580	11.25027	1.775024
LOG(PRODUCTIVITY)	0.000223	95.19628	1.588405
HDI	2.38E-06	314.3865	1.514421

***Source**: Results of Research Analysis*

Heteroscedasticity Check

In addition to multicollinearity, the results of the regression analysis also need to be examined whether there are symptoms of heteroscedasticity. Table 10 shows the results of the heteroscedasticity test, the Glejser test results show obs*R-squared > 0.5 so there is no heteroscedasticity problem.

5 Discussion

From the results of regression testing it was found that the minimum wage has a role that has a significant negative impact on the level of welfare (WI). This finding is in line with [13], but not in line with research conducted by [2], [3] where both of their studies found that the minimum wage has a positive role on the level of welfare. There are several reasons why this

minimum wage can negatively affect people's welfare. First, from an inflation perspective, if the minimum wage is increased significantly, in this scenario, firms could experience increased production expenditures, subsequently affecting consumers with higher price levels.. The impact of this inflation can reduce people's purchasing power, especially for groups whose income does not increase in line with rising prices. As a result, people's overall well-being may decrease due to their ability to buy less goods and services. Second, decreased investment: a drastic increase in the minimum wage may cause companies to hesitate to make new investments or expand their operations. This is because higher labor costs can reduce a company's profitability. A decrease in investment can result in slower economic growth, which can have a negative impact on people's welfare. Third, the income gap: if the minimum wage is not evenly distributed, workers in sectors or regions with lower minimum wages will earn less than workers in sectors or regions with higher minimum wages. This can lead to an increase in the income gap between groups of workers, so that it can reduce people's welfare.

Then in this study found results that the level of productivity has a positive role on the level of welfare (WI). This is in line with research conducted by [12] in analyzing the impact of labor productivity on household welfare, the results of which show that productivity will later increase the standard of living of the workforce and their families as a burden. High labor productivity can contribute to improving people's welfare. When employees become more efficient, they can generate a larger quantity of goods and services in a more efficient time, thereby increasing people's lives. Then with high productivity, people have better access to the necessities needed to improve living standards. In addition, they also have higher purchasing power so that they have access to quality education, adequate housing, sufficient food, and good health services. In this context, a high level of productivity can make a significant contribution to improving people's welfare.

Furthermore, the results of this research reveal a favorable correlation between human development and the level of well-being. If the human development index increases, it is hoped that there will be an increase in the level of social welfare. This finding is in line with research conducted by [10], [15] which found that in general human capital has a positive influence on people's welfare. For example, people with a high HDI tend to have high per capita income as well, so they can improve people's welfare through higher per capita spending. The human-focused development concept is expected to have an impact on the ease of access to education as measured by the average length of schooling [23]. Furthermore, on the health aspect as measured by life expectancy, and the third is purchasing power which is reflected in expenditure per capita of the population [24]. By applying the principles of human development, HDI helps create an environment that supports individual development and enhances social well-being. By improving these factors, HDI contributes to improving living standards and a better quality of life for the people.

6 Conclusion

The results of this study found that the role of the minimum wage on the level of welfare of districts/cities in West Java Province during the period 2015 to 2021 has a negative influence. Minimum wages that are set too high can have a negative impact on the level of welfare. This can lead to violence, work stoppages, increased prices and decreased investment. Therefore, the

minimum wage policy needs to be considered carefully so that it has a good impact on improving people's welfare. The level of productivity plays a positive role in the level of welfare of districts/cities in West Java Province during the period 2015 to 2021. High productivity can increase individual income, create jobs, improve living standards, encourage innovation. Therefore, by encouraging an increase in productivity, in the long run it can contribute to an increase in people's welfare. The human development index plays a positive role in the level of welfare of districts/cities in West Java Province during the 2015–2021 period. An increase in the HDI can have a positive impact on the level of welfare, because better education, better health, and high community economic capacity can improve people's quality of life. The independent variables and control variables in this study as a whole include minimum wages, productivity levels, human development index have a significant influence on the level of welfare.

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