WAGE GAP ANALYSIS BETWEEN GENDER IN THE INFORMAL SECTOR DURING COVID-19
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ABSTRACT
The level of wages received by workers in the informal sector tends to be lower than workers in the formal sector. This condition can be exacerbated if there is gender discrimination, which causes differences in the distribution of wages for workers. This study aims to identify wage discrimination between the genders of informal sector workers. The independent variables of this study consist of education, age, training, incentives, gender and type of work. The gender wage ratio and gender productivity ratio were estimated simultaneously using the non-linear logistic regression method. This study found evidence of wage discrimination against women in the informal sector. Education and training contribute positively to equal pay between women and men.

Keywords: Discrimination; Informal Sector; Wage Gap

ABSTRAK

Keywords: Diskriminasi; Sektor Informal; Kesenjangan Upah

JEL : I31; O17; J31

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Introduction
The COVID-19 pandemic has affected the redesign of the national development strategy, and the problems that have arisen due to the pandemic have had an additional negative impact on solving unfinished economic problems. The existence of the Covid-19 pandemic will have an impact on people’s income levels (Verianto, et al., 2022). There was an increase in the income gap between genders in the 2020-2021 period, as the World Economic Forum
reported in March 2021. As many as 5% of female workers lost their livelihoods, while male workers only experienced an impact of 3.9% (WEF, 2021).

The COVID-19 pandemic has created new obstacles to inclusive and prosperous economic development. The pre-existing gender gap has reinforced the asymmetric crisis between men and women. The role of women at the forefront of crisis management has an essential impact, especially for women workers. Women are more vulnerable to leaving work and becoming unemployed (Landivar et al., 2020) the authors examine how the coronavirus disease 2019 (COVID-19). The sectors that have been hit hardest by the lockdown and rapid digitalization of the economy are where women are more often employed; women workers often experience policies reducing working hours and becoming unemployed. The research by Reichelt et al. (2020) argues that given the added pressure on women to provide family care at home, this crisis halted progress towards gender equality in several economic industries (WEF, 2021).

The labour market and its output are fundamental factors that must be considered as the basis of economic fundamentals. The decline in economic growth due to the economic crisis has the potential to increase income inequality. If we see a positive relationship between economic growth and inequality, Widayanti et al. (2013), Based on data from the ILO (International Labor Organization), state that the impact of the COVID-19 pandemic on the gender gap is quite high.

The higher the GDP per capita, the lower the level of the gender wage gap in a country. As much as six percent of the gender wage gap is influenced by the value of economic growth, which is proxied by GDP per capita in each of the Asian countries sampled in this study. This indicates that the more advanced a country is, the lower the wage gap level or, the higher the GDP per capita value of a country, the smaller the gender wage gap index (Widayanti et al., 2013)

The economic crisis triggered by the COVID-19 pandemic affected the employment situation in Indonesia. Some workers were forced to be sent home and even experienced termination of employment (PHK) due to disruption to the operational activities of companies affected by this crisis. Six business fields have the potential to be quite severely affected, namely accommodation and food and beverage providers; trading; transportation and warehousing; construction; processing industry; and other services.

Based on Sakernas and Susenas’s 2019 data, the six business fields are dominated by workers from the middle economic group, most of whom are high school graduates. When viewed from the status of workers, the accommodation and food and beverage provider sector, trading, and transportation and warehousing are dominated by informal workers. In addition, this crisis also has the potential to reduce the level of women’s work participation, especially in other service sectors and providers of accommodation and food and beverages. The situation of the workforce in the six sectors described in this issue note can serve as basic information for policymakers in developing an effective strategy to deal with the impact of the COVID-19 pandemic on employment in Indonesia (Rahman et al., 2020)

Research related to gender discrimination in the manufacturing industry finds evidence of wage discrimination against women in the manufacturing sector. After disaggregating companies based on export status, wage discrimination against women was found in non-exporting companies, while in exporting companies, there was no wage discrimination. (Laili & Damayanti, 2018) The absence of strict regulations regarding the provision of wage
levels causes the problem of discrimination in several industrial sectors. At the international level, it is still possible to have agreements and ratifications not to discriminate against workers. In the informal sector, which tends to be untouched by government regulations and policies, it is prone to discriminatory behaviour (Anastasia et al., 2013).

Accommodation, food and beverage provider sector; transportation, warehousing; and trade are dominated by informal workers, while the other three sectors are dominated by formal workers. Formal/informal status influences how the workforce adapts to crisis situations and approaches to policy interventions for dealing with unemployment. For example, it is easier for informal sector workers to change their type of business (flexibility) depending on economic conditions than formal workers. Informal workers have limited access to social protection programs and other government programs. For example, the National Economic Recovery program designed to deal with the impact of the COVID-19 crisis only targets the formal sector. Therefore, it is also necessary to have crisis management policies/programs that target workers in the informal sector (Rahman et al., 2020).

The informal sector contributes to more accessible employment than the formal sector. However, informal workers often receive discriminatory treatment, mainly because there is no formal contract and clear legal rules. Research about the dilemma of the informal sector’s existence shows that there is a role for the informal sector in employment and the absorption of the unemployment rate. The formal sector is considered unable to provide job opportunities for all levels of society, especially those in marginal positions. In several cases, especially those related to the urban informal sector, treatment and state policies have become very discriminatory because they often deal with state policies that even end in violence. Efforts that can be made to avoid discriminatory treatment at the level of formal workers are to seek regulations and legal instruments that can protect workers (Sulistyo Rini, 2013). The problem that is difficult to overcome is how to protect informal workers. The phenomenon of the gig economy is also a sign of how companies treat informal workers. When workers are unable to negotiate wages, this consequence is obtained because there is no official contract between the worker and the company, workers who do not have precise legal force will find it more difficult to obtain rights according to the provisions.

**Literature Review**

**Education and Inequality**

Research related to the influence of educational factors on reducing inequality shows that the effect of education on income is higher for workers who are more skilled (labour with higher education). In other words, education can reduce income inequality.

Meanwhile, according to Handayani et al. (2018), the probability of mobility of labour in the informal sector is affected by the level of education; labour in the informal sector with higher education chooses not to survive working in the informal sector, while labour in the informal sector with low levels of education chooses to stay working in the informal sector. This is because workers in the informal sector are workers whose productivity levels tend to be low, as evidenced by the factors that make workers enter the informal sector in the form of wage level, gender and education level.

Income inequality occurs because of *over-education*, interactions between abilities and education, and differences in the quality of schools or departments (fields of study) between regions. If the analysis is carried out according to gender, it turns out that the effect of education on men’s income is lower than that of women. Education can reduce income
inequality between genders. Therefore, the government can increase investment in education to reduce income inequality, including income inequality between genders (Wahyuni & Monika, 2017) we suggest a robust stylised fact: returns to education are higher for the more skilled individuals (workers who have high schooling. To the researchers’ knowledge, no one has raised a research theme related to the wage gap between genders in the informal sector. This research related to the gender wage gap uses data from surveys of informal workers. Data at the worker level is then used to estimate the wage equation.

Comparable Worth Doctrine

It is a doctrine that states that female workers in certain jobs should receive the same wages as male workers in other jobs. This doctrine assumes that the skills, work ethic, working conditions and responsibilities in the two types of work can be compared. So far, it has been stated that the wage rate is determined by the mechanism of the labour market. However, according to this doctrine, the level of pay is associated with an assessment of the attributes or nature of work, such as skills, work ethic etc. The existing attributes are then given a specific score to determine the level of wages for each job. Although there are criticisms of this doctrine, several opinions that support and respond to these criticisms include the problem of discrimination in wage levels which is quite significant in this matter and needs to be resolved immediately. Efficiency in the labour market is not the only orientation but also needs to pay attention to the equity factor (Teguh, 2010).

Theoretical Review

The term informal sector was first introduced by Keith Hart, which was the result of a study of the unique economic activities in Accra and Gana. In his research, he found large variations in the availability of legal and illegal income opportunities among the urban poor (Gilbert & Gugler, 1996, p. 95).

The definition of the informal sector is often accompanied by a list of activities visible when one walks the streets of a Third World city: street vendors, newspaper sellers, buskers, beggars, hawkers, and others. They are untied and unskilled workers with low and irregular incomes. Workers with informal employment status include (1) self-employed, (2) trying to be assisted by temporary workers/unpaid workers, (3) casual workers in agriculture, (4) casual workers in non-agriculture, and (5) family workers/ unpaid. In 2019, the number of formal workers was 55,272,968 workers, an increase of 4.1 percent from the previous year of 53,094,391 workers. Meanwhile, in the informal sector, the number of workers in the same year was 74,093,224 people, an increase of 0.16 percent from the previous year. The trend of the last eight years is that the growth of the formal sector tends to be higher than that of informal sector workers. However, Indonesian workers are still dominated by informal workers, 57.27 percent, compared to formal workers, 42.73 percent, in 2019. Some of the characteristics of informal workers include related to all of their activities which rely on the surrounding resources; The business scale is relatively small and is a family business; Its activities are supported by appropriate technology and are labour-intensive; The workforce is educated or trained in informal patterns; All of its activities are outside the channels regulated by the government, and Its activities operate in highly competitive markets. Nariswari (2020), it was concluded that workers in the informal sector tend to have low incomes, so informal sector workers are close to poverty.

Based on the Global Gender Gap report (table 1), Indonesia ranks 101st out of 156 countries. WEF (2021) Women workers often experience discrimination in wage levels; the
global gender gap assessment shows Indonesia’s ranking of the gender gap. If the formal sector has work rules, especially in the wage system, the informal sector is more vulnerable to discriminatory treatment.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iceland</td>
<td>0.892</td>
<td>-</td>
<td>+0.016</td>
<td>+0.111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Finland</td>
<td>0.861</td>
<td>1</td>
<td>+0.029</td>
<td>+0.065</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Norway</td>
<td>0.849</td>
<td>-1</td>
<td>+0.007</td>
<td>+0.050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>New Zealand</td>
<td>0.840</td>
<td>2</td>
<td>+0.041</td>
<td>+0.089</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sweden</td>
<td>0.823</td>
<td>-1</td>
<td>+0.003</td>
<td>+0.009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Indonesia</td>
<td>0.688</td>
<td>-16</td>
<td>-0.013</td>
<td>+0.034</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: World Economic Forum 2021

The wage rate is the main factor where the wage rate received by workers in the informal sector tends to be lower than workers in the formal sector. The issue of gender inequality needs to get attention from the government to provide protection for every individual. Low wages for women can make it difficult for households to get out of poverty and/or increase their consumption, especially for households with female heads of household. The existence of these economic consequences causes the gender pay gap to become a crucial problem (Ekaningtyas, 2020).

Research methods

This research is research using a survey method, primary data, which is taken directly from respondents consisting of male and female workers who work in the informal sector industry in the city of Surabaya. Qualitative data were obtained through interviews and observation. Data were obtained in accordance with the research objectives. Types of data include education, work experience, workability, and wages. Quantitative analysis uses statistical tools, both descriptive statistics and inferential statistics. Descriptive statistics are intended to describe the characteristics of respondents and a description of the research variables. The methods used in this research are analysis of the average difference test and correlation analysis, while inferential statistics use logistic regression analysis.

This study limits research subjects to informants with the same level of education, namely at the high school level of education (High School), with demographic controls ranging in age from 15-60 years, other limitations used in this study are related to the type of business and work experience between 1- 3 years. Other limitations in this study include labour status. Because the number of respondents is not known, the non-random sampling technique was used to determine the sample, namely the Accidental Sampling technique.

This research is a cross-sectional study conducted from January to March 2022. The research was conducted on informal workers in Surabaya. 148 workers were selected by Simple Random Sampling. Respondents were interviewed regarding the type of work experience, discrimination in the workplace and the level of wages obtained based on the type of work. The salary ordinal used in this study is <1 million, 1 -2 million, 3 million-6 million, 6 million-8 million, > 8 million.
Results and Discussion

Logistic regression results show that there are 4 variables, namely gender, type of work, education, training, age and length of work, with the dependent variable salary with three categories, namely low, sufficient and high.

Simultaneous Test

Simultaneous tests were conducted to check the overall significance of the coefficients $\beta$. If the parameters tested are significant, it can be said that the model formed is suitable for modelling the response variable. The hypothesis used is as follows. $H_0: \beta_1 = \beta_2 = \ldots = \beta_9 = 0$ $H_1: \text{at least one } \beta_j \neq 0; j=1,2,.. 9$

<table>
<thead>
<tr>
<th>Model</th>
<th>$-2$ Log Likelihoods</th>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finals</td>
<td>532,883</td>
<td>129,348</td>
<td>21</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Based on Table 2 it is known that the chi-square value for the simultaneous test is more than 24.996, this indicates that $H_0$ is rejected. So it can be said that there is at least one predictor variable that influences the response.

Parsial test I

Partial testing is carried out because in simultaneous testing, it is indicated if there is at least one predictor variable that has a significant effect on the response. This partial test is used to obtain which variables affect the response. The hypothesis used is as follows. $H_0: \beta_j = 0$ $H_1: \beta_j \neq 0; j=1, 2, 3, ..., 9$

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Estimation</th>
<th>std. Error</th>
<th>Wald</th>
<th>df</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages</td>
<td>Constant 1</td>
<td>4,689</td>
<td>0.743</td>
<td>39,849</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Constant 2</td>
<td>7,289</td>
<td>0821</td>
<td>78,884</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Constant 3</td>
<td>8,614</td>
<td>0.866</td>
<td>98,848</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>Education</td>
<td>X1</td>
<td>0.851</td>
<td>0.183</td>
<td>21,705</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>Training</td>
<td>X2</td>
<td>0.332</td>
<td>0.085</td>
<td>15.178</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>X3</td>
<td>0.093</td>
<td>0.145</td>
<td>0.415</td>
<td>1</td>
<td>0.519</td>
</tr>
<tr>
<td>Length of working</td>
<td>X4</td>
<td>0.487</td>
<td>0.146</td>
<td>11.102</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td>Work Type</td>
<td>X5</td>
<td>-0.563</td>
<td>0.237</td>
<td>5,639</td>
<td>1</td>
<td>0.018</td>
</tr>
<tr>
<td>Sex</td>
<td>X6</td>
<td>0.476</td>
<td>0.228</td>
<td>4,372</td>
<td>1</td>
<td>0.037</td>
</tr>
</tbody>
</table>

In Table 3 it can be seen that a significant variable is a variable that has a value on the Wald test of more than 3.841 so it was decided to reject $H_0$. These variables are Education (X1), Training (X2), Length of Work (X4), type of work (X5) and Gender (X6). Insignificant variables were removed and then re-modeled to get the best model.

Best Model Concurrent Test

Simultaneous tests on the selection of the best model were carried out to check the significance of the overall coefficients. If the parameters tested are significant, it can be said that the model formed is suitable for modeling the response variable. The hypothesis used is as follows. $H_0: \beta_1 = \beta_2 = \ldots = \beta_5 = 0$ $H_1: \text{at least one } \beta_j \neq 0; j=1,2,.. 5$
Table 4: Best Model Concurrent Tests

<table>
<thead>
<tr>
<th>Model</th>
<th>Likelihood Ratio Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finals</td>
<td>102,968</td>
<td>5</td>
<td>0.000</td>
</tr>
</tbody>
</table>

In Table 4 it is known that the chi-square is more than 18.307, this indicates that H0 is rejected. So it can be said that there is at least one predictor variable that influences the response.

**Best Model Partial Test**

The hypothesis used is as follows. H0: $\beta_j = 0$ H1 : $\beta_j \neq 0$ ; $j=1, 2, 3, ..., 5$

Table 5: Best Model Ordinal Logistic Regression Analysis Test Results

<table>
<thead>
<tr>
<th>Parameter</th>
<th>estimate0r</th>
<th>std. Error</th>
<th>Wald Chi-Square</th>
<th>df</th>
<th>Sig.</th>
<th>Ods</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant 1</td>
<td>2.758</td>
<td>0.4179</td>
<td>43,559</td>
<td>1</td>
<td>0.000</td>
<td>15,770</td>
</tr>
<tr>
<td>constant 2</td>
<td>4.276</td>
<td>0.4519</td>
<td>89515</td>
<td>1</td>
<td>0.000</td>
<td>71,932</td>
</tr>
<tr>
<td>constant 3</td>
<td>4.983</td>
<td>0.4722</td>
<td>111,340</td>
<td>1</td>
<td>0.000</td>
<td>145,848</td>
</tr>
<tr>
<td>Man</td>
<td>0.287</td>
<td>0.1314</td>
<td>4,755</td>
<td>1</td>
<td>0.029</td>
<td>1,332</td>
</tr>
<tr>
<td>Education</td>
<td>0.495</td>
<td>0.1050</td>
<td>22215</td>
<td>1</td>
<td>0.000</td>
<td>1,641</td>
</tr>
<tr>
<td>Informal Worker</td>
<td>-0.278</td>
<td>0.1375</td>
<td>4,099</td>
<td>1</td>
<td>0.043</td>
<td>0.757</td>
</tr>
<tr>
<td>Training</td>
<td>0.204</td>
<td>0.0496</td>
<td>16,901</td>
<td>1</td>
<td>0.000</td>
<td>1,226</td>
</tr>
<tr>
<td>Length of working</td>
<td>0.324</td>
<td>0.0614</td>
<td>27,747</td>
<td>1</td>
<td>0.000</td>
<td>1,382</td>
</tr>
</tbody>
</table>

In Table 5 several variables have a significant effect because the value on the Wald test is more than 3.841. These variables are Education (X1), Training (X2), Length of Work (X4), type of work (X5) and Gender (X6). After knowing the influential variables, the next step is to form a logit model that is used to calculate the opportunities log. The following is the result of the logit model:

\[ Y = 2.758 + 0.287X_1 + 0.498X_2 - 0.278X_3 + 0.204X_4 + 0.324X_5 + e \]  \hspace{1cm} (1)

\[ Y = 4.276 + 0.287X_1 + 0.498X_2 - 0.278X_3 + 0.204X_4 + 0.324X_5 + e \]  \hspace{1cm} (2)

\[ Y = 4.983 + 0.287X_1 + 0.498X_2 - 0.278X_3 + 0.204X_4 + 0.324X_5 + e \]  \hspace{1cm} (3)

After knowing the logit model, we can calculate the probability with the example of each respondent to get the opportunity based on the desired variable. The magnitude of the influence of each significant variable is explained by the odds ratio values shown in Table 5. Based on the odds ratio values, the interpretations that can be given are as follows:

A. The male gender has the opportunity to get wages 1.332 times that of women
B. The increase in one level of education allows getting a higher wage 1.641 times compared to the education below it
C. Informal workers tend to earn 0.757 times lower than formal workers
D. Workers who receive training have the potential to earn 1.226 times higher wages
E. Length of work affects the increase in wages 1,382
In the study, the variables of education and training affect the level of workers’ wages. The influence of education has a higher impact of 1.641. Meanwhile, the effect of training on potential wages is 1.226 times higher. The level of education and training included in the Explained gap is the difference in wages between male and female workers due to differences in education and work experience (Ekaningtyas, 2020). Marnisah (2017), Education can reduce the wage gap between women and men. This condition found evidence that women tend to seek higher levels of education than men to reduce the wage gap between them and their male counterparts. Other research also shows that women with strong abilities, through increased education, through equal pay strategies, will be effective (Miki & Yuval, 2011). The wage rate is one of the labour productivity assessments explained in the Mincer function:

\[ \ln w = \alpha_0 + \alpha_1 Yos + \alpha_2 Exp + \alpha_3 Exp^2 + \varepsilon \]

This function explains the relationship between the real wage rate \( w \) and various influencing factors, namely education level \( Yos \) and work experience \( Exp \). The difference in the results of productivity characteristics is a variable that cannot be observed or cannot be explained. As a result, this difference indicates the potential for discrimination to arise. The potential difference in wage rates between male and female workers is 1.322 times. Other studies have found that the gender wage gap is still dominated by unexplained factors and is indicated as discrimination at the average level and in each quintile in the wage distribution (Hennigusnia, 2014). The unexplained gap, also called the residual wage gap, is the difference in wages between men and women that are not explained by differences in human capital. Employers consider the residual gender wage gap a form of wage discrimination (Ekaningtyas, 2020). Differences in wage levels can be caused by several factors, such as women’s naturally declining productivity cycle due to pregnancy, childbirth, breastfeeding, and limited physical abilities.

According to Folke & Olle Rickne (2022), the impact on female workers. A mother with young children experienced the largest decrease in labour force participation between February and April 2020 (3.2 percent reduction among mothers with children under 6 years and 4.3 percent reduction among those with children 6 to 12). Fathers are also leaving the workforce, but their exit rates are 1 to 2 percent lower, meaning almost 250,000 more mothers than fathers with children under 13 are leaving work. Higher education allows women to earn 1.641 times higher wages than lower education. This condition is in accordance with the research of Landivar et al. (2020), the authors examine how the coronavirus disease 2019 (COVID-19) there are differences in the level of wages given to women, but there are factors that can increase women’s equality, namely the level of education.

Conclusions and Recommendations

The contribution of women in the workforce is needed to restore economic conditions during the COVID-19 pandemic. However, the treatment of violence, harassment and discrimination against female workers was still common, especially during the COVID-19 pandemic. Based on the study’s results, it was shown that male workers had the opportunity to earn 1,332 times the wages of women. Unobservable or unexplained. As a result, this difference indicates the potential for discrimination to arise. The increase in one level of education gives the opportunity to get a higher wage 1,641 times compared to the education below. Informal workers tend to earn 0.757 times lower than formal workers. Workers who receive training have the potential to earn 1,226 times higher wages. Length of work affects the increase in wages 1,382. Education and training have contributed to increasing equality in wages between women and men.
Kafabih, A. & Ridwan, M. Wage Gab Analysis Between Gender in The Informal Sector During Covid-19

Reference


Folke, Olle Rickne, J. (2022). *Sexual Harassment and Gender Inequality in The Labor Market*.


