Factors that influence wages differences in formal sector on male and female workers in Palembang City

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Abstract. This study was conducted to analyze the effect of education, age, working hours, work experience and risks on the wages in formal sector on male and female workers in Palembang city. The data used in this study is primary data in the form of questionnaires or questions that are asked directly to respondents from 6 industrial companies at risk with 164 respondents consisting of 104 male respondents and 60 respondents from the total population 211 people. Data analysis methods used are different test analysis and multiple regression analysis. The results showed that male respondents on education, working hours, work experience had a positive and significant effect on the wages of male workers while age had no effect on the wages of male workers while female respondents showed that education, age and risk had a positive effect and significant effect on the salary of women workers. While work experience and working hours have a positive and not significant effect on the salary of women workers. Then for the different parameters test results showed that education, age, working hours and work experience have different parameters between men and women while for risk there is no difference between men and women.

Keywords: wages of male workers, wages of female workers, education, age, working hours, work experience, risk.

JEL Classification: J31, J24, L25, J2.
1. Introduction

Differences in labor wages by gender are still a topic of discussion and problems in every country in the world, one of which is in Indonesia. Differences in labor wages by gender are differences in the average wages that occur between men and women or differences that show female workers’ wages are lower than men. According to Vakulenko and Leukin (2017) said that women’s wages are lower than men’s occur in almost all countries in the world, and the difference in wages occurs in all wages patterns both daily, weekly, and monthly and occurs in almost all non-agricultural sectors and manufacturing sectors separately. World Economic Forum (2015) conducted an evaluation in 145 countries in the world with consideration of participation in the fields of economy, health and education to measure and see differences in wages between genders. The results reveal that no country has succeeded in erasing wage differentials between genders (Henigusnia, 2014). The difference in gender wages in Indonesia itself is still a problem that is often discussed. The problem of wage differentials in Indonesia is still confronted by the problem of the labor force, which is larger of low quality due to low levels of education.

Apart from that the high labor force participation rate in Indonesia is not followed by high productivity as well, so that those who work often get low wages and incomes (Ananta, 1990). There are significant inequalities in the application of wages in Indonesia. It can be proved by looking at and using data from the National Secretariat of 1996, 1999, 2002 and 2004 which showed that factors that cause disparities to occur, one of which is due to differences in characteristics in terms of employment (Primana, 2006). This wage difference also occurs in provinces and cities in Indonesia, namely South Sumatra. The difference in gender wages in the province of South Sumatra according to BPS (2017) continues to increase every year is evidenced in 2013 the difference in wages by gender only amounted to 0.20% and in 2017 increased to 0.29%. The difference in wages between genders in South Sumatra has a direct impact on one of the cities, Palembang.

The average wage rate for female workers in Palembang in 2013-2017 though the increase was 23.69%, but was still far higher than the increase in the wages of male workers, which was 30%. So, the ratio of women’s wages to males decreases from 73% to 69%. The lowest female wage ratio occurred in 2014, which was 62% (Pusdatinaker, 2018). This, of course, raises some characteristic factors that cause the difference in the application of wages. Based on the explanation above, this study aims to analyze the influence of education, age, working hours and work experience of male workers and women’s wages on the formal sector in Palembang.

2. Review of literature

According to Jacobsen (2004), the low wage of female workers compared to male workers is due to differences in human capital, namely Education. Because education is one of the important factors in developing human resources (Tarmizi, 2012). According to the theory of human quality capital, education and training can not only improve one's knowledge but also improve skills, thereby increasing work productivity.
Borjas (2016), older workers will earn more income, because they are enjoying result of investment and in the end the curve shows the level of income received by workers slower in line with the development of time spent by workers, then age affects it. This income is also caused by several factors that influence it, namely young workers usually have limitations in terms of skills and experience so that the marginal product produced will be much lower than older workers and someone who works at a job at risk will receive a higher wage that higher than someone who works in a job that has no risk at all. Someone who has work experience will receive higher and higher wages than someone who has no work experience at all. Furthermore, these working hours greatly affect the level of wages received, if the wage offered is high, the hours of work to be provided by workers also increase, which means that the more wages provided by employers, the more hours of work to be provided by workers (Borjas, 2016; Tanzel and Bircan, 2010; Hennigusnia, 2014). In general, a person will work if the wage level in the labor market is equal to or higher than the reservation wage, which is the minimum wage that encourages the owner of the workforce to enter the labor market by offering several of hours of work (McConell, 2015).

Becker (1995) states the differences in the application of wages between women and men workers can also be caused by the choice of workplaces. Research conducted by Adireksombat and Sakellarion (2010), explains that the largest wage gap between genders is caused by a person's human capital factors, namely education and work experience. In other words the level of wages received is determined by the investment of human capital that is in him. Another study conducted by Susilowati (2005) showed that differences in wages by gender are more due to the choice of place of work. The results of research conducted by Oaxaca (1973) revealed that the gender gap between wages was largely influenced by factors of education, health problems, work experience and migration. Firdaus (2011) found that differences in endowments caused wage differences or determinants of wage rates between men and women in the formal and informal sectors.

Ismail and Jajri (2012) in their observations in Malaysia found that the difference in wages or income received by the workforce was caused by race, human capital and job characteristics say that workers who receive training, higher education will be able to receive higher salaries when compared to uneducated workers as well as workers who have more work experience for the various sectors of the work it does. Likewise with Tanzel and Bircan (2010) indicates that the working sector has an influence on the gap in revenue determination received. Which is the case of the Turkish state showed or described someone working in the public sector will be much greater received remuneration in terms of money compared to someone working in the private or special sector.

Miswar (2018) analyzed wage levels in Aceh showed that education, the employment sector and working hours have a positive effect on the wage levels of workers in Aceh, which in this study education refers to the length of time a person experiences education. Another study conducted by Susilowati (2015) showed that wage differences by gender were mostly caused by family role constraints then he also said that differences in the application of labor wages were greatest in the agricultural sector while the smallest occurred in the non-agricultural sector in a state of normal employment status. According to Adireksombat and Sakellarion (2010) said that the wage gap between genders in
Thailand is most dominant due to discrimination factors (factors that cannot be explained significantly) when compared to endowment factors namely education, age and employment status and also found that the level of gender inequality in the labor market increased each year from 1991 to 2007 or for the past 16 years. Picchio (2006) in his research which aims to estimate the gap in obtaining wages between workers viewed from their employment status in Italy, using household data in 2002 through income welfare surveys showed that workers with honorary status will receive lower income compared to with workers who are permanent employees.

Analysis by Ruhiyat (2008) using Sakernas 1998 data stated that in general, the wages of female workers are still below the wages of male workers, where the wages of female workers whose status is employees or laborers only get wages of 29.6% to 90, 22% compared to the wages of male labor as well as later. Kapsos analysis (2008) based on data from the Bangladesh Bureau of Statistics shows that the income received by women per hour is only 21% than men and the difference that is distinguished by age, education, industry, work, and geographical location is only 15.9% affect the gender wage gap. A study done by Lamazi (2018) revealed that the variable hours of work, education levels, and non-agricultural sectors have a significant influence on women's income in South Sumatra. Then the non-agricultural employment variable has a negative effect on the wages received by women workers, suggesting that the wages received by women working in the non-agricultural sector will be lower than the wages of women working in the agricultural sector. Furthermore, the status variable and having children under five did not significantly influence the wages of female workers in South Sumatra.

Reshid (2016) in his study of university graduates in Sweden in the period 1996-2012 revealed that the role of job mobility and the chosen occupation greatly affected the level of wages to be received, this led to a wage gap between genders. Then the study also found that this gender wage gap had increased over the past 10 years when entering the labor market which is equivalent to a gender gap in annual wage growth of 1%. Furthermore, research conducted by Jacob (2006) using the Oaxaca Blinder decomposition analysis concluded that the labor wage gap could not be explained even though control had been carried out with variables thought to affect the application of labor wage levels, namely: employment, industry, workers and job’s characteristics.

Berardi (2013) states that work experience as a classic determinant of wages is in line with expectations, namely to increase wages significantly. Marital status does not significantly influence wages in the informal sector but is significant in the formal sector and gender and regional origin do not significantly affect wage levels. Furthermore, research done by Hossain and Haque (2015) found that education, age, gender and place of work had a significant effect on differences in daily wages and annual wages received by workers in Bangladesh. Study done by Hafid (2014) showed that the number of hours worked, the work system and the number of dependents had a positive effect on the level of nominal wages received by textile workers and their derivatives. Whereas the length of service, education, and gender do not affect the nominal wage level received by textile industry workers.
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Study conducted by Ghazali, Wahyuddin, and Trisnawati (2012) showed that the variable position, company location, employment status and age significantly influence wage levels. While experience, education level and gender do not significantly influence wage levels in the public sector. Then, study done by Bhattarai and Winiewsky (2002) found that age, gender, and length of the school were the most significant factors affecting the level of wages received by workers in the United Kingdom. While the vocational qualification factor does not have a significant effect on wage levels.

3. Methodology

Based on the literature review and previous studies, the framework of this study is shown in the following figure:

**Figure 1. Analytical framework**

![Analytical framework diagram]

This study was conducted in Palembang city, as the object of study were male and female workers who worked in the formal sector. According to BPS criteria the formal sector has 2 employment statuses, namely permanent workers/employees/laborers and workers assisted by permanent workers. The problems to be examined are the factors that influence the difference in the wages of male and female workers, including: education, age, working hours, work experience, and risks that are suspected to affect the wages of formal sector male and female workers in city Palembang city. The data used is primary data in the form of questionnaires or questions directly asked respondents directly related to the production process, while secondary data came from BPS (Statistics Indonesia) of South Sumatra in 2018 and the Directory of Large and Medium Industrial Company in South Sumatra Province in 2018.

The number of respondents in the study came from 6 industries at risk as seen from the tools and materials used in Palembang city with the total of 164 respondents consisting of 104 male respondents and 60 female respondents from a total population of 211 people. Data collected used a survey method with proportional random sampling technique. Then the method used is the parameter difference test method and the multiple regression analysis method separately for male and female respondents. The model used is as follows:
Different parameter test analysis

This model is used to find out whether or not there are differences in the parameters of the independent variables between men and women. The equation model for the different parameter tests is as follows:

\[ U = \alpha_0 + \alpha_1 D_L + \alpha_2 P + \alpha_3 D_L P + \alpha_4 U_m + \alpha_5 D_L U_m + \alpha_6 J K + \]
\[ + \alpha_7 D_L J k + \alpha_8 P K + \alpha_9 D_L P k + \alpha_{10} R_s + \alpha_{11} D_L R_s + e \]  

(1)

Where: \( \alpha_1 - \alpha_{11} \) = Regression coefficient; \( \alpha_0 \) = Kontanta; \( U \) = Wage; \( D_L \) = The dummy variable is 1 for men and 0 for women; \( P \) = Education; \( D_L P \) = dummy multiplied by education; \( U_m \) = Age; \( D_L U_m \) = dummy times age; \( J K \) = Working hour; \( D_L J k \) = dummy multiplied by work hours; \( P K \) = work experience; \( D_L P k \) = dummy times work experience; \( R_s \) = Risk; \( D_L R_s \) = dummy multiplied by risk; \( e \) = error term.

2. Multiple regression analysis

This model is used to look at factors that influence wages of female workers and wages of male workers. The econometric equation model is as follows:

\[ U^L = a_0 + a_1 P + a_2 U_m + a_3 J K + a_4 P K + a_5 R_s + e \]  

(2)

\[ U^W = a_0 + a_1 P + a_2 U_m + a_3 J K + a_4 P K + a_5 R_s + e \]  

(3)

Where:

\( U^L \) = wages for men;
\( U^W \) = wages for women;
\( P \) = education;
\( U_m \) = Age;
\( J K \) = Working hour;
\( P K \) = Work experience;
\( R_s \) = risk;
\( e \) = confounding variable.

Age is the age of the respondent or worker stated by the date, month and year of birth. Education is the highest and last education completed by the respondent measured in years. Work experience is the difference in age with the age of education completed. Working hours are the number of hours worked by a person excluding rest hours and working hours used for things other than the main job. Risk is a dummy variable where when it is assumed in carrying out the work there is a risk of 1 and when the work is done does not open opportunities for injury not at risk 0.

4. Empirical result

The initial analysis results in this study are about the frequency distribution of each variable studied based on field research in the formal sector according to gender. The distribution is the distribution of respondents according to education, age, working hours, work experience, risk and wage levels as follows:
Based on the above table regarding the distribution of respondents based on education, age, working hours, work experience, risk and wage levels it is known that for male and female respondents the highest school education is 59.62% for men and 55% for women. Then the
distribution of respondents by age shows that the age of men is at most 26-35 years which is 44 people (42.30%), while for female respondents, the most are 36-45 years old that is equal to 27 people or 45 percent. Furthermore the respondents' distribution based on working hours said that both male and female respondents worked more than 40 hours per week, so this concluded that respondents in the formal sector worked above normal working hours.

Distribution of respondents based on work experience shows that male respondents have the most work experience ranging between 11-20 years which is equal to 37.5% (39 people), whereas for female respondents the most have work experience ranging from 21-30 years which is equal to 48.33% or 29 people. Furthermore, the distribution of respondents according to risk shows that both male and female respondents work the most at risk compared to those who are not at risk, amounting to 53.84% or as many as 56 people for men and as many as 31 people and by 51.67% for female respondents. Finally, the distribution of wage levels for both men and women has the most wages ranging from Rp. 2,100,000.00 to Rp. 3,000,000.00 per month.

Table 6. Different Test Results for Male and Female Parameters

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Konstanta</td>
<td>-69126.704</td>
<td>-2.944</td>
<td>0.004</td>
</tr>
<tr>
<td>DL</td>
<td>-12041.538</td>
<td>-2.822</td>
<td>0.005</td>
</tr>
<tr>
<td>Education</td>
<td>127929.532</td>
<td>3.085</td>
<td>0.002</td>
</tr>
<tr>
<td>DL Education</td>
<td>25009.869</td>
<td>5.291</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>24223.631</td>
<td>2.349</td>
<td>0.002</td>
</tr>
<tr>
<td>DL Age</td>
<td>3684.556</td>
<td>3.194</td>
<td>0.002</td>
</tr>
<tr>
<td>Working Hours</td>
<td>42190.309</td>
<td>2.690</td>
<td>0.004</td>
</tr>
<tr>
<td>DL Working Hours</td>
<td>16956.063</td>
<td>2.311</td>
<td>0.022</td>
</tr>
<tr>
<td>Work Experience</td>
<td>13387.941</td>
<td>2.576</td>
<td>0.011</td>
</tr>
<tr>
<td>DL Work Experience</td>
<td>22855.522</td>
<td>2.346</td>
<td>0.001</td>
</tr>
<tr>
<td>Risk</td>
<td>347621.666</td>
<td>2.578</td>
<td>0.011</td>
</tr>
<tr>
<td>DL Risk</td>
<td>5489.272</td>
<td>1.207</td>
<td>0.229</td>
</tr>
</tbody>
</table>

Source: SPSS Processed Results.

Based on the results of different test parameters of men and women show that the parameters between men and women are different or there are differences for all variables except risk variables because seen from the significance value for all variables namely education, age, working hours and work experience are in below 0.05 or 5% (<0.05) while the risk variable is above 0.05. The difference in education variables between men and women is caused by the lack of opportunities for women to pursue higher education and the production level and ability of women who are considered lower than men. Then for the age variable there is a difference due to female workers in their 20-30s married, pregnant, and having children decided to stop working with the reason to take care of the family and when they return workers will receive a salary at the initial point like new workers, while men will continue to work until reaching the age of retirement so that the salary received will continue to grow.

Furthermore, for the variable hours worked, there are differences in parameters due to the decision of workers to choose to add or break down working hours. In general, women usually consider leisure as a normal item because it is prioritized for household needs. Whereas men consider leisure as inferior goods because as the head of the family must
Factors that influence wages differences in formal sector on male and female workers in Palembang City meet the needs of the family. The different parameters of work experience between men and women are caused by different work experiences due to the type of experience. Usually men have experience of practical training and general training while for women only have experience of general training caused by their physical weakness. Meanwhile, the risk variable does not have different parameters because if men and women work in the same place, the risks they face will be the same.

Table 7. Results of Estimation of Multiple Linear Regressions for Male Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-value</th>
<th>Std Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>152,939</td>
<td>4,271</td>
<td>35,809</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>27,308</td>
<td>1,441</td>
<td>18,955</td>
<td>0.153</td>
</tr>
<tr>
<td>Working Hours</td>
<td>59,146</td>
<td>1,945</td>
<td>30,414</td>
<td>0.055</td>
</tr>
<tr>
<td>Work Experience</td>
<td>36,243</td>
<td>2,040</td>
<td>17,769</td>
<td>0.044</td>
</tr>
<tr>
<td>Risk</td>
<td>354,110</td>
<td>2,176</td>
<td>116,776</td>
<td>0.032</td>
</tr>
</tbody>
</table>

Kontanta = -711,683, R-Square = 0.658, R-Square Adjusted = 0.641, D-W Hitung = 1.827, F-Statistik = 40,377

Source: Processed Results of SPSS, 2019.

Table 8. Results of Estimation of Multiple Linear Regressions for Women Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>t-value</th>
<th>Std Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>127,929</td>
<td>3,678</td>
<td>34,780</td>
<td>0.001</td>
</tr>
<tr>
<td>Age</td>
<td>24,223</td>
<td>2,144</td>
<td>11,296</td>
<td>0.037</td>
</tr>
<tr>
<td>Working Hours</td>
<td>42,190</td>
<td>1,282</td>
<td>32,910</td>
<td>0.205</td>
</tr>
<tr>
<td>Work Experience</td>
<td>13,387</td>
<td>1,104</td>
<td>12,131</td>
<td>0.275</td>
</tr>
<tr>
<td>Risk</td>
<td>347,621</td>
<td>2,399</td>
<td>144,888</td>
<td>0.020</td>
</tr>
</tbody>
</table>

Kontanta = -59,126, R-Square = 0.551, R-Square Adjusted = 0.541, D-W Hitung = 2.050, F-Statistik = 19,997

Source: Processed Results of SPSS, 2019.

Then based on the results of the regression that has been done, the simultaneous equation model can be formulated as follows:

\[ U_m = -711,683 + 152,939P + 27,308Um + 59,146JK + 36,243PK + 354,110Rs + e \]

\[ U_w = -59,126 + 127,929P + 24,223Um + 42,190JK + 13,387PK + 347,621Rs + e \]

Based on the calculation results F obtained a value of 40,337 for male respondents and 19,997 for female respondents. So that it can be concluded that the independent variables for both men and women together influenced the dependent variable. Then the results of processing found that the value of the coefficient of determination for male respondents by 66% and for women by 55% which means that the variables of education, age, hours of work, work experience by 55% for women and 66% percent for men and the rest 34% for men and 45% for women are explained by other variables not included in the regression model.

The results of the estimation of the regression equation show that the education variables for female and male workers have a positive and significant effect on the wages of male and female workers. This can be seen from the coefficient values of 152,939 and 127,929, respectively. And for the value of t-count for each respondent of 4.271 and 3.678 is greater than the t-table for men for 1.659 and t-table for women for 1.670 (t-count > t-table). The significance of this educational variable is in accordance with research conducted by
Intan Nurpratiwi, Syamsurijal Ak, Yunisvita (2018); Firdaus (2011); Primana (2006) and Oaxaca (1973) which stated that a person's income is a reflection of individual choice of investment in education and training because the wage level is determined by investment in human capital in which if one's education increases, the wages to be received will also increase.

Based on the results of estimation obtained that age for male workers has a positive and not significant effect on the wages of male workers as seen from the coefficient value of 27.308 and the value of t-count smaller than t-table (1.441 < 1.659). Whereas for female workers, it shows that age has a positive and significant effect on the wages of female workers as evidenced by a coefficient value of 24.223 and a t-test value greater than t-table (2.144 > 1.670). The significance of the age variable in male respondents is not following the theory, but the significance of the age variable in female respondents is in accordance with the theory that the marginal revenue from efficiency of quality of human capital which initially rises, then decreases as the working age increases. Because young workers usually have limitations in terms of skills and work experience so that the marginal product produced will be much lower than older workers (Borjas, 2016).

The estimation results of the equation show that working hours have a positive and significant effect on the salary of male workers. This can be seen from the t-value greater than t-table (1.945 > 1.659). Whereas for female workers it was shown that working hours had a positive and not significant effect on the wages of female workers because the t-count was smaller than t-table (1.282 < 1.670). The significance of the working hour variable in male respondents is consistent with the theory and research conducted by Firdaus (2011); Blinder (1973) and Sugiharso (1990) which stated that the preferences of individual workers could affect the level of wages earned was highly dependent on the hours worked by the worker.

Regression results for work experience differ between men and women in which for men the work experience variable has a positive and significant effect on the wages of male workers, as evidenced by a coefficient value of 36.243 and a t-test value greater than t-table (2.040 > 1.659). Whereas for women, it showed that the work experience variable had a positive and not significant effect on the wages of female workers, as seen from the t-count value which was smaller than t-table (1.104 < 1.670). The significance of the work experience variable in men is in line with the hedonic theory which states that one of the causes of wage differences is the difference in experience that workers have. Because according to Tarmizi (2012) work experience is reflected by workers who can work elsewhere before so that the more work experience gained by workers will make these workers more trained and skilled in carrying out their work. However, this situation is inversely proportional to women, which shows that work experience does not make women workers more skilled.

The results of the regression equation show that risks for both men and women have a positive and significant effect on the wages of male and female workers with coefficients of 354.110 and 347.621, respectively. Then the t-value of the risk of male and female respondents is greater than t-table, namely (2.176 > 1.659) and (2.333 > 1.670). This result is in accordance with the hedonic theory and Wellschmied (2016) which states that the
source of the difference in the level of wages of workers includes 2 aspects namely diverse aspects of work and diverse aspects of workers.

5. Conclusion

Based on the results of the study showed that male respondents on education, working hours, work experience and risk have a positive effect on the wages of male workers and age have a positive and no significant effect on the wages of male workers. Meanwhile the female respondents showed that education, age and risk had a positive and significant effect on the wages of female workers while working hours and work experience had a positive and no significant effect on the wages of female workers. Then for the different parameter test results showed that education, age, working hours and work experience have different parameters between men and women while for risk there is no difference between men and women. Some suggestions that can be offered are Palembang city government can make strategies to control the distribution of wage that occurs and make a policy. Policies that are made are not only standard policies to increase women's productivity, but also create policies that promote justice between men and women in recruitment and workplaces so that the welfare of male and female workers can be increased.

References


