The Gender Wage Gap in Fisheries Labour Market: The Analysis of Sociodemographic and Work-Related Factors in Indonesia

Yulinda Nurul Aini1*  
1Demography and Population Studies, University of Southampton, Southampton – United Kingdom

*Corresponding Author: email:yulindaaini@gmail.com - University Road Southampton SO17 1BJ, United Kingdom

Abstract: Income inequality is a challenge in the workplace, particularly in the fisheries subsector. Women are exploited, undervalued, and have limited educational opportunities. Age, education, employment position, duration of employment, and hours worked all contribute to this discrepancy. This study investigates how sociodemographic and work-related factors affect the gender wage gap in Indonesia's fisheries subsector. 7,574 samples from the 2019 National Labour Force Survey were utilized. In this investigation, multiple linear regression analysis was employed. We find that age (p<0.001), working hours (p<0.001), and years worked (p<0.001) have a positive and significant association with earnings. In all categories, women earn less than men on average. The discrepancy in income depending on age, hours worked, and years worked ranges between 350 and 600 thousand rupiahs. The interaction of education and job status is likewise significant (p<0.02). This interaction also demonstrates the correlation between education level and wealth gap. Inequality in income ranges from 450 to 800 thousand rupiahs for formal workers with a low level of education to a bachelor's degree, and from 450 to 550 thousand rupiahs for informal workers. For this reason, increasing education and empowering women are important factors in reducing income inequality and realizing the SDGs target to achieve decent work. Furthermore, government programs and policies at both the community and national levels need to adopt the norms, roles, and involvement of women in the fisheries subsector.

Keywords: fisheries; gender wage gap; labour market; multiple regression

berdasarkan usia, jam dan lama kerja berkisar antara 350-600 ribu rupiah. Model interaksi antara pendidikan dan status pekerjaan juga berpengaruh signifikan (p<0.02). Hasil interaksi ini juga menunjukkan bahwa ketimpangan pendapatan berbanding lurus dengan tingkat pendidikan. Pada pekerja formal, ketimpangan pendapatan berkisar antara 450-800 ribu rupiah dari pekerja berpendidikan rendah hingga sarjana, sedangkan pada pekerja informal, gap berkisar antara 450-550 ribu rupiah. Untuk itu, peningkatan pendidikan dan pemberdayaan perempuan merupakan faktor penting dalam mereduksi ketimpangan pendapatan dan mewujudkan target SDGs untuk mencapai decent work. Selain itu, program dan kebijakan pemerintah juga perlu mengadaptasi norma, peran, dan keterlibatan perempuan di sektor perikanan baik di tingkat komunitas maupun daerah

Kata Kunci: perikanan; ketimpangan pendapatan; pasar kerja; multiple regression

A. Introduction

The engagement of women in all aspects of life is evidence of their emancipation and empowerment.1 Gender equality is the achievement of the rights, opportunities, and equitable treatment of men and women across all age groups and stages of life, especially in the workplace.2 Gender equality does not mean that men and women are equal, but their rights, responsibilities, and access to resources are the same.3 Significantly, gender equality adds to the Sustainable Development Goals (SDGs) of "poverty reduction and food and nutrition security".4 Gender equality has the potential to boost household productivity, income, and nutritional satisfaction in the subsector of fisheries.5

In actuality, there are various gender disparities in the Indonesian fisheries subsector, including a salary gap between male and female employ-

According to the International Labour Organization (ILO), women earn 23% less than men’s income. Men dominate high-paying positions as well. ILO Convention No. 100 of 1951 on equal pay for equal work for men and women; ILO Convention No. 111 on the prohibition of discrimination and equal opportunity and treatment in work based on origin and gender; and ILO Convention No. 183 of 2000 on women’s right to 14 weeks of leave apply. In addition, the Labour Law No. 13 of 2003 in Indonesia specifies that men and women have equal rights and opportunities when it comes to choosing, performing, or switching occupations, as well as receiving sufficient compensation.

Despite their substantial role and devotion to the domestic economy and society, women in the fisheries sector are overworked and their efforts are undervalued. Furthermore, they are frequently underpaid and exploited by employers. According to Dr. Cynthia McDougall, the gender team leader at WorldFish, several restrictions, such as social, economic, policy, and ecological difficulties, wealth and poverty, ethnic and caste affiliation, education, and other criteria, limit women’s participation and effect in the fisheries sector. Women earn 31% less than men after factoring for education, experience, employment situations, and a range of other factors, according to a European study.

Typically, female employees are illiterate or have a lower degree of education than I do. Two-thirds of the 900 million illiterate people are

---

women, according to research. In addition, women are more susceptible to disease and have less opportunities to enhance their abilities and gain access to education and training. A second issue is the perception that fishing is largely a male occupation and that women perform more post-harvest chores.

Differences in male and female productivity depend on age, job status, position, and a variety of other occupational factors. Consequently, this study will use these sociodemographic factors as an explanatory variable in measuring productivity, which is proxied by income levels. Several studies have investigated female income inequality, with one finding that education had a significant impact on income disparity. According to a research conducted in Vietnam, the primary causes of the gender wage disparity are education, job, and geography. Furthermore, work-related factors are important in interpreting worker income disparities.

This study aims to investigate how sociodemographic parameters (such as gender, age, educational level, and household size) and work-related factors (such as job status, working hours, and years worked) affect the income level of Indonesian fisheries workers. Then, this research estimate the income inequality between male and female workers with different characteristics. Comprehensive information on gender inequality in the labour market is a

---


critical issue that necessitates time and consistent work.\textsuperscript{21} Because both men and women are crucial in achieving the full potential of fisheries and fostering equitable and sustainable economic growth.\textsuperscript{22} In addition, the findings of this study can help policymakers in developing policies for vulnerable people, notably in the subsector of fisheries.

B. Methods

Data Collection

Data from the August 2019 edition of Indonesia’s National Labour Force Survey (SAKERNAS) were used in this study.\textsuperscript{23} This data was provided by the Indonesian Central Bureau of Statistics (CBS). The respondents were workers in the fisheries sector between the ages of 15 and 64, with a total of 7,574 weighted samples out of a population of 1,749,684. In this study, the response variable is income, whereas the explanatory factors are age, gender, years worked, hours worked, education, household size, and job status. This research classifies job status as formal or informal. Informal activities are economic activities organized by companies without a standard structure, account transactions, or seasonal or personal employment relationships (without contracts).\textsuperscript{24} Table 1 shows the variable used in this research and their categorical value.

According to CBS, there are three proxies for distinguishing between formal and informal labour. In this study, however, we use the first proxy, which is the classification of formal and informal workers based on job status. Workers are classified as "formal" if they are attempting to be assisted by permanent or paid workers (code 3) or workers/employees (code 4). Other codes, on the other hand, are classified as "informal." This proxy is also used in

\textsuperscript{21} International Labour Organization, \textit{Equality in Employment: Key Concepts and Principles (Book 1) - Practical Guidelines for Employers for Promoting Equality and Preventing Discrimination at Work in Indonesia.}


\textsuperscript{24} Badan Pusat Statistik, \textit{Analisis SE06 mengenai Ketenagakerjaan} (Jakara: Badan Pusat Statistik, 2009).
Key Indicators of the Labour Market (KILM), Issue 7 of the Labour Market Indicator Publication. Based on some of the literature in the preceding subchapter, the hypothesis of this study is that men with more than one year of work experience, who work more than 35 hours per week, who have a high school education or higher, who have a larger household size, and who are formal workers have a greater chance of earning better incomes than their counterparts. Utilizing a statistical model will aid in answering the hypothesis’s questions.

Table 1
Data and Variables Used in the Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data Type/Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>Numeric/Ratio</td>
<td>In Rupiahhs</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Numeric/Ratio</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Categoric/Nominal</td>
<td>Women</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Men</td>
</tr>
<tr>
<td>Years Worked</td>
<td>Categoric/Nominal</td>
<td>Less than one year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More than one years</td>
</tr>
<tr>
<td>Hours Worked</td>
<td>Numeric/Ratio</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Categoric/Ordinal</td>
<td>No Schooling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elementary School</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior High School (JHS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senior High School (SHS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diploma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bachelor+</td>
</tr>
<tr>
<td>Household Size</td>
<td>Numeric/Ratio</td>
<td></td>
</tr>
<tr>
<td>Job Status</td>
<td>Categoric/Nominal</td>
<td>Informal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formal</td>
</tr>
</tbody>
</table>

Data Analysis

In the early phases, an association test was performed between the explanatory variables and the response variables using the Pearson correlation, ANOVA test, or Spearman rank, adjusted for the data scale. This test aims to

---

calculate and understand the impact of a linear or nonlinear relationship between two variables. Pearson correlation is used for data with an interval or ratio scale; the ANOVA test is used for data with a nominal scale; and the Spearman rank is used for data with an ordinal scale. If the correlation value has a p-value of less than 5%, it is determined that the variables are correlated.

Because the response variable has a ratio scale, this study used multiple linear regression (MLR) to assess the relationship between worker sociodemographic characteristics (X) and income (Y). The resulting regression equation is as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \cdots + \beta_n X_n + \epsilon \]  

(1)

When \( n \) is the number of explanatory variables, \( \beta_0 \) is the y intercept, \( \beta_1, \ldots, \beta_n \) is the variable's coefficient, and \( \epsilon \) is the error term.

Several measures, including adjusted R-square (\( R^2 \)), the F-test, and parameter significance, will be used to assess the goodness of the generated regression model. Aside from MLR, we also utilize descriptive statistics in tables and graphs to examine variable distributions and summarize data.

C. Results

Characteristics of Man and Woman Engage in Fishery Occupation

Figure 1 and Table 2 show the income distribution by gender and other sociodemographic variables. According to Figure 1, the average income of male workers is higher than that of female workers. Meanwhile, men have a wider income interquartile range than women. The first and third quartiles for men are around 1 million and 2.6 million, respectively, while the values for women are around 600,000 and 1.8 million, respectively. Persistent income disparities between men and women will have an impact on economic performance in the future. As a result, we must identify sources of inequality in order to close the income distribution gap in fishery occupations.

\[ \text{Clef} \]


27 Cleff.
In general, the biggest proportion of all employees included in the sample was in the age ranges 35–44 (one-fourth) and 25–34 (one-fourth) (Table 2). More than one-third of the samples have a primary school education, while the other one-fourth did not study at all. Meanwhile, only one percent more people hold a college degree or above. Two-thirds of this sample have four to five family members. In terms of employment, two-thirds of them work in the informal sector for less than 30 hours per week and have been employed for more than a year. The trend of this fraction is nearly identical for male and female workers.

We examine the income distribution based on the sociodemographic parameters of workers. For males, workers aged 35–44 years (about 2.3 million), those with a diploma (approximately 5.4 million), and households with 1-2 individuals (around 1.6 million) had the highest average income. Workers in the formal sector earn more than those in the informal sector. Furthermore, people who work more than 54 hours per week and have been employed for more than a year earn more than other categories.

The salary distribution for female employees follows a very similar pattern to that of male employees, with the highest income going to those who are 35 to 44 years old, have 1-2 family members, are formal, work more than 54 hours per week, and have been employed for more than a year. In contrast, women with a bachelor's degree or higher earn the most money compared to
### Table 2

#### Distribution of Income Based on Sociodemographic Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>Mean Income</td>
<td>%</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24</td>
<td>16.56</td>
<td>1,668,889</td>
<td>9.18</td>
</tr>
<tr>
<td>25-34</td>
<td>24.46</td>
<td>2,014,240</td>
<td>17.95</td>
</tr>
<tr>
<td>&gt;35-44</td>
<td>26.82</td>
<td>2,323,068</td>
<td>30.08</td>
</tr>
<tr>
<td>45-54</td>
<td>19.49</td>
<td>1,991,831</td>
<td>24.47</td>
</tr>
<tr>
<td>&gt;55</td>
<td>9.87</td>
<td>1,991,864</td>
<td>12.93</td>
</tr>
<tr>
<td>&gt;64</td>
<td>2.79</td>
<td>1,519,658</td>
<td>5.38</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No schooling</td>
<td>24.16</td>
<td>1,861,665</td>
<td>34.31</td>
</tr>
<tr>
<td>Elementary School</td>
<td>37.20</td>
<td>1,888,280</td>
<td>33.02</td>
</tr>
<tr>
<td>Junior High School</td>
<td>20.37</td>
<td>3,867,927</td>
<td>16.21</td>
</tr>
<tr>
<td>Senior High School</td>
<td>17.15</td>
<td>2,174,740</td>
<td>14.95</td>
</tr>
<tr>
<td>Diploma</td>
<td>0.27</td>
<td>5,429,183</td>
<td>0.52</td>
</tr>
<tr>
<td>Bachelor+</td>
<td>0.85</td>
<td>2,940,830</td>
<td>0.99</td>
</tr>
<tr>
<td>Household Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 2 person/s</td>
<td>8.66</td>
<td>1,630,827</td>
<td>13.17</td>
</tr>
<tr>
<td>3 - 5 persons</td>
<td>63.96</td>
<td>1,531,885</td>
<td>62.06</td>
</tr>
<tr>
<td>6 - 8 persons</td>
<td>23.93</td>
<td>1,352,384</td>
<td>22.73</td>
</tr>
<tr>
<td>More than 8 persons</td>
<td>3.45</td>
<td>1,153,285</td>
<td>2.04</td>
</tr>
<tr>
<td>Job Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal</td>
<td>38.53</td>
<td>1,439,889</td>
<td>17.45</td>
</tr>
<tr>
<td>Formal</td>
<td>61.47</td>
<td>1,495,665</td>
<td>82.55</td>
</tr>
<tr>
<td>Hours Worked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>24.81</td>
<td>1,109,428</td>
<td>48.82</td>
</tr>
<tr>
<td>30-34</td>
<td>7.50</td>
<td>1,247,845</td>
<td>8.05</td>
</tr>
<tr>
<td>35-39</td>
<td>10.12</td>
<td>1,393,103</td>
<td>10.83</td>
</tr>
<tr>
<td>40-44</td>
<td>11.41</td>
<td>1,619,610</td>
<td>10.98</td>
</tr>
<tr>
<td>45-49</td>
<td>12.25</td>
<td>1,605,276</td>
<td>7.14</td>
</tr>
<tr>
<td>50-54</td>
<td>4.87</td>
<td>1,489,683</td>
<td>2.10</td>
</tr>
<tr>
<td>&gt;54</td>
<td>29.03</td>
<td>1,878,090</td>
<td>12.09</td>
</tr>
<tr>
<td>Years Worked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>9.54</td>
<td>1,287,369</td>
<td>11.24</td>
</tr>
<tr>
<td>More than 1 year</td>
<td>90.46</td>
<td>1,495,750</td>
<td>88.76</td>
</tr>
<tr>
<td>N</td>
<td>1,477,714</td>
<td>271,970</td>
<td>1,749,684</td>
</tr>
</tbody>
</table>
those with lower levels of education. Surprisingly, though, women consistently earn less than men in all job categories. In the same category and across all categories, male workers make approximately twice as much money as female workers. For instance, in informal employment, women typically earn 750 thousand rupiahs, whereas men in the same position can earn up to 1.5 million. These descriptive findings have demonstrated a substantial salary gap between male and female workers in the fisheries subsector.

The average income of women is half that of men, according to other research, which supports this finding.28 Another study found that women work fewer hours than men on average.29 Women must divide their work time because, in addition to working, they also serve as housekeepers. This finding is consistent with the findings of other research, who discovered that women work 18.8% fewer hours than men.30

**Bivariate Association between Income and Demographic Factors**

Table 3 shows the statistical association test results for income and sociodemographic characteristics. According to Table 3, at the 5% level of significance, gender, years worked, education, and hours worked have a positive and significant association with income.

<table>
<thead>
<tr>
<th>Correlation Test</th>
<th>Variables</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA (F-test)</td>
<td>Gender</td>
<td>158.83</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Years Worked</td>
<td>35.2</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Job Status</td>
<td>2.22</td>
<td>0.137</td>
</tr>
<tr>
<td>Pearson</td>
<td>Household Size</td>
<td>0.025</td>
<td>0.071**</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>0.013</td>
<td>0.347</td>
</tr>
<tr>
<td></td>
<td>Hours Worked</td>
<td>3.75</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Spearman Rank</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *Significant at alpha of 5%, **Significant at alpha of 10%

---

30 Otobe.
Meanwhile, household size has a positive and significant association with income (using an alpha of 10%). Other variables, such as job status and age, have p-values of 0.137 and 0.347, respectively, indicating that they are not significant because the p-value exceeds 0.05. Although not statistically significant, we include these two variables in the model because, according to the literature, job status and age contribute to the wage disparity between male and female fishermen.

**Multiple Linear Regression of Income and Demographic Factors**

In this part, we use OLS regression to analyze the factors influencing workers’ income in the fisheries subsector, with income as the dependent variable. We enter all explanatory variables into the model in the first stage (diagnostic residuals are shown in Figure 2.a). The residuals are not normally distributed based on the normality test results since they have a p-value greater than the 5% level of significance. Furthermore, a visual diagnostic check using the scatterplot between the residuals and the fitted values reveals the funnel shape, indicating that the model violated the homoscedasticity condition.

To address these issues, the variable income is changed to lambda = 0.37 using the Box-Cox transformation. The residuals, as shown in Figure 2.b, reveal a normal line with a p-value of 0.15 (more than 0.05). The versus fits also show scattered dots that do not form a funnel shape, thus satisfying the assumption of homoscedasticity.

In addition to transformation, integrating interaction effects into the model can help with the heteroscedasticity problem. In this study, we are interested in the interaction between job status and education. According to the ILO, highly educated workers are likely to enter the formal sector, while less educated people tend to enter the informal sector.\(^{31}\) The projected value between education and job status, which forms a parallel line, served as the inspiration for developing this interaction model (see Figure 3).

Table 4 shows the results of the transformation regression model with interaction patterns. Except for the diploma category parameter in the

---

Figure 2
Residual Diagnostic for the Initial Model

(a) Initial Model  (b) Transformation Model

Figure 3
Association Between Women’s Job Status and Education before Interaction
education variable and the interaction between diplomas and informal workers, almost all parameters in the model are significant at the 5% level of interest. As a result, we performed a joint F-test on the insignificant variables. The joint F-test on these two variables yields F-tests of 17.735 (p-value<0.001) and 2.685 (p-value 0.020), indicating that all variables are significant at the 5% level of interest. The addition of interaction causes the previously insignificant job status variable to become significant. This model has an adjusted R2 of 13.9%, which means that all explanatory variables in the model can only explain 13.9% of the total variation in income.

Table 3
Income and Sociodemographic Regression Model with Interaction

<table>
<thead>
<tr>
<th>Term</th>
<th>Coef</th>
<th>SE Coef</th>
<th>T</th>
<th>P</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>219.302</td>
<td>10.416</td>
<td>21.055</td>
<td>&lt;0.001*</td>
<td>(198.883; 239.721)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Women</td>
<td>-27.040</td>
<td>2.103</td>
<td>-12.860</td>
<td>&lt;0.001*</td>
<td>(-31.162; -22.917)</td>
</tr>
<tr>
<td>Years Worked</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- More than 1 years</td>
<td>17.042</td>
<td>2.278</td>
<td>7.481</td>
<td>&lt;0.001*</td>
<td>(12.576; 21.508)</td>
</tr>
<tr>
<td>Job Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Informal</td>
<td>-48.172</td>
<td>16.452</td>
<td>-2.928</td>
<td>0.003*</td>
<td>(-80.426; -15.919)</td>
</tr>
<tr>
<td>Hours Worked</td>
<td>0.585</td>
<td>0.032</td>
<td>18.274</td>
<td>&lt;0.001*</td>
<td>(0.523; 0.648)</td>
</tr>
<tr>
<td>Age</td>
<td>0.335</td>
<td>0.057</td>
<td>5.851</td>
<td>&lt;0.001*</td>
<td>(0.223; 0.447)</td>
</tr>
<tr>
<td>Household Size</td>
<td>-0.357</td>
<td>0.358</td>
<td>-0.997</td>
<td>0.319</td>
<td>(-1.059; 0.345)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No Schooling</td>
<td>-70.172</td>
<td>10.307</td>
<td>-6.808</td>
<td>&lt;0.001*</td>
<td>(-90.378; -49.966)</td>
</tr>
<tr>
<td>- Elementary</td>
<td>-62.434</td>
<td>10.179</td>
<td>-6.133</td>
<td>&lt;0.001*</td>
<td>(-82.389; -42.478)</td>
</tr>
<tr>
<td>- JHS</td>
<td>-52.186</td>
<td>10.283</td>
<td>-5.075</td>
<td>&lt;0.001*</td>
<td>(-72.345; -32.027)</td>
</tr>
<tr>
<td>- SHS</td>
<td>-49.903</td>
<td>10.314</td>
<td>-4.838</td>
<td>&lt;0.001*</td>
<td>(-70.123; -29.683)</td>
</tr>
<tr>
<td>- Diploma</td>
<td>-7.528</td>
<td>18.159</td>
<td>-0.415</td>
<td>0.678</td>
<td>(-43.128; 28.071)</td>
</tr>
<tr>
<td>Interaction of Job Status*Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- No Schooling*Informal</td>
<td>46.396</td>
<td>16.706</td>
<td>2.777</td>
<td>0.006*</td>
<td>(13.646; 79.146)</td>
</tr>
<tr>
<td>- Elementary*Informal</td>
<td>49.380</td>
<td>16.604</td>
<td>2.974</td>
<td>0.003*</td>
<td>(16.829; 81.931)</td>
</tr>
<tr>
<td>- JHS*Informal</td>
<td>50.326</td>
<td>16.724</td>
<td>3.009</td>
<td>0.003*</td>
<td>(17.540; 83.112)</td>
</tr>
<tr>
<td>- SHS*Informal</td>
<td>46.060</td>
<td>16.705</td>
<td>2.777</td>
<td>0.006*</td>
<td>(13.646; 79.146)</td>
</tr>
<tr>
<td>- Diploma*Informal</td>
<td>-2.979</td>
<td>32.410</td>
<td>-0.092</td>
<td>0.927</td>
<td>(-66.516; 60.558)</td>
</tr>
<tr>
<td>Goodness of Fit Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-test</td>
<td>57.978</td>
<td></td>
<td></td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.142</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.139</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Joint F-test
- F-test of Interaction | 2.685 | 0.020* |
- F-test for Education  | 17.735 | <0.001* |
Yulinda Nurul Aini


Based on Table 4, we may construct a regression equation similar to Equation 2. We can see that the parameter coefficients for age, hours worked, and years worked are all positive, implying that every year of age, hour of labour, and year of work increases workers’ income. The regression coefficient for household size, on the other hand, is negative, indicating that the larger the family, the lower the workers’ income. Figure 4 compares the incomes of female and male workers using the regression results’ margins of error.

Figure 4
Margins Plot of Years Worked, Hours Worked, Age, and Household Size of Women and Men’s Income
In all categories, women's incomes are consistently lower than men's. For the varying years worked, women who worked more than one year saw an average pay rise of 400 thousand rupiahs, while men saw an increase of 300 thousand rupiahs. The opposite was observed for the age variable, with women aged >64 earning 300 thousand rupiahs more than those aged 24 compared to around 400 thousand for men. For the hours worked variable, the difference in income for women working hours >54 and 30 is roughly 600 thousand rupiahs, while the difference for men is around 700 thousand rupiahs. Meanwhile, workers with a family of more than eight individuals are likely to have a wage that is less than 100 thousand lower than those with a household size of 1-2 person/s, for both men and women.

Figure 4 similarly depicts significant income discrepancies between men and women in the fisheries subsector. Women with less or more than one year of experience, for example, have a 500 thousand lower salary than men. The income disparity between men and women is more than 400 thousand at the age of 24 years and more than 500 thousand at the age of >64 years. Men and women have a pay discrepancy of more than 400 thousand for working hours less than 30 hours and about 600 thousand for working hours greater than 54 hours.

Meanwhile, a line plot, as shown in Figure 5, can help us detect patterns of interaction between job status and education for men and women. The results of the interaction regression model demonstrate changes in the patterns of informal sector workers across all education levels, with the lines no longer paralleling those of the formal sector. More educated workers will generally have more knowledge, which will lead to a greater salary, and vice versa. Formal workers have a greater income than informal workers in the no-education category. Informal workers, on the other hand, catch up from elementary to JHS; but their income reduces again at SHS and diploma, widening the pay disparity between formal and informal workers. Income in the bachelor category increased somewhat, in keeping with the increase in formal workers. As a result, the higher the level of education of fishery occupation workers, the greater the wage disparity.

Although the pattern of interaction between job status and education is the same for men and women, the amount of income in each interaction is different. This demonstrates that, despite their significant participation, women
in the fisheries sector obtain lower yields and income than males and are left in a bad position.\(^{32}\)

Figure 5 demonstrates that workers with no education earn the least compared to other education levels. In the informal sector, women with a bachelor’s degree earn less than males with no education. Furthermore, in the formal sector, women with SHS education levels earn less than males with no schooling. This is corroborated by evidence from other research, which demonstrates that women earn 30–40\% less than men for the same type and status of job.\(^{33}\) Another study found that men have a greater degree of education than women due to women’s limited access to education and training.\(^{34}\) Because of this limitation, women are more likely to work in low-wage employment in the informal sector.\(^{35}\)

\[\text{Figure 5}\]

Association between Job Status and Education after Interaction

---


D. Discussion

The Effect of a Better Education to the Gender Wage Gap

Young women and men have distinct times of transition into maturity. They are more likely to get married and to reside with their spouses, therefore they have less education and are less inclined to be employed. Women with low levels of education are more likely to have informal employment with poor pay. However, since the mid-1980s, more women than males have entered higher education institutions. A better education assists a woman to obtain a prestigious position at work.

Increasing educational attainment is one strategy for reaching economic equality between men and women in the fisheries sector. ILO argues that Women's increased education level helps to a reduction in economic inequality. Equal access to education might increase human capital by enhancing skills, hence affecting future labour market results.

The Effect of Work-Related Characteristics to the Gender Wage Gap

In addition to education, additional obstacles limit women's involvement and responsibilities in the fisheries subsector, contributing to the issue of gender inequality. Women have distinct roles, activities, knowledge, and information; thus, their access to and control over resources differ. According to the above MLR analysis, hours worked, job status, and years worked have a

---


considerable effect on a worker's income. Other studies have found that work-related parameters, such as occupation, sector, and hours worked, account for more than fifty percent of the gender wage disparity.\textsuperscript{41}

A study states that the income gap between men and women is only 15\% in early careers.\textsuperscript{42} Because job experience and skill acquisition are still at a minimum at this stage, educational qualifications and school experiences are regarded as the most significant.\textsuperscript{41} However, in advanced careers, work-related characteristics such as job status and the number of hours worked are important.

Job status might impact the income of fisheries. Those with formal worker status are paid more than those with informal worker status do.\textsuperscript{43} This is one of the consequences of global integration and progress.\textsuperscript{44} In addition, men were more likely than women to work in professional occupations, while women continued to hold traditionally female jobs.\textsuperscript{45}

Male workers are physically more robust than female employees. Consequently, they generally participate in physically demanding jobs, such as fishing.\textsuperscript{46} In contrast, women are deemed more suited for light and low-risk work.\textsuperscript{47} They are more dexterous, hardworking, and precise, therefore they focus on post-production tasks, such as processing fishery products and packing, among others.\textsuperscript{48}

\begin{thebibliography}{99}
\item Fuchs et al., “Where do women earn more than men? Explaining Regional Differences in the Gender Pay Gap.”
\item Hong Vo et al., “The Determinants of Gender Income Inequality in Vietnam: A Longitudinal Data Analysis.”
\item Blau and Kahn, “The Gender Wage Gap: Extent, Trends, and Explanations.”
\end{thebibliography}
Even when they are working, women are frequently allocated low-paying employment. In the meanwhile, skills are becoming a greater indicator of income. Men are more concentrated in higher-paying jobs, and women are more concentrated in lower-paying professions, according to another study.

The FAO and World Fish Aquaculture Big Numbers research reveal that in developing nations such as Indonesia, more than forty percent of women are engaged in freshwater, cage, and household-based aquaculture. According to the results of previous research, women are more likely to engage in consumer-facing activities, such as trading fish catch, processed fish, and other fisheries goods. This disparity in job is also a contributing element to the salary discrepancy. This assumption is substantiated by research indicating that occupation accounts for 22% of the wage gap between men and women.

In numerous developing Asian nations, similar to Indonesia, women perform post-harvest jobs such as fish handling, sorting, processing, drying, and marketing. In China and Bangladesh, women catch fish alone or in tandem with men. Due to the fact that the roles and relations of men and women are complimentary, assistance must be concentrated on these two roles in order to achieve objectives.
The Effect of Individual Characteristics to the Gender Wage Gap

According to the FAO, the majority of fisheries production activities in Indonesia are conducted within the scope of the household, with family members, including women, participating in fishing activities. In addition to educational and work-related factors, family formation, such as motherhood and marriage affects women’s labour force participation and income inequality. According to a survey, women with children earn less than women without children. This criterion does not apply to men, as there is no income equivalent for fathers or single men.

In the domestic domain, women play three roles: reproductive, community, and productive. Productive jobs include the production of commodities or services to satisfy household need. In terms of labour force reproduction, reproductive roles include childrearing, family care, etc. In contrast, community duties involve the maintenance and provision of common consumption, including health care, education, and housing requirements, among others. Despite the fact that both men and women have various duties, males can accomplish their occupations sequentially while women conduct their jobs concurrently. In addition, women’s working hours are shorter than men’s due to their diverse roles. According to a research, women must divide their time between working, caring for children and elderly parents, and managing the household. In contrast, these roles are not assigned to men.

Another reason for women’s lower income compared to men is that working women are seen as disrupting family norms, where men should act as the main breadwinners in the family. In the fisheries sector, women generally

56 Food and Agriculture Organization, The State of World Fisheries and Aquaculture 2020.
59 Surbakti and Devasahayam, Women and Girls in Indonesia: Progress and Challenges.
60 International Labour Organization, Gender Equality and Decent Work: Selected ILO Conventions and Recommendations That Promote Gender Equality as of 2012.
do unpaid work (helping their husbands), such as preparing fishing equipment, selling fish catch, and various other jobs. Meanwhile, men are generally engaged in paid work. With this status, women are mostly positioned in supporting roles, while the responsibility and decision-making are carried out by men.

In addition, women are unable to follow the vocations or careers of their preference. This state is a result of culture or ideology that has determined which occupations are suitable for women. It is believed that women's participation in the labour field erodes men's role as the major breadwinners in their households. Meanwhile, according to a research, women's participation in economic activities is a kind of emancipation and empowerment. Social transformation through construction and gender roles can equalize the roles of men and women, both in the labour and domestic markets.

Gender equality is required since it is essential for making significant contributions to the fisheries sector. It has the potential to bring about several advantages, including increased fisheries output and household income. Thus, women can contribute to the attainment of the Sustainable Development Goals (SDGs) by fostering equitable and sustainable economic growth and ensuring that everyone has access to adequate available jobs. To sustain women's position in


68 Dewi et al., "Roles and Voices of Farmers in the ‘Special Purpose’ Forest Area in Indonesia: Strengthening Gender Responsive Policy."

economic activities, human capital, such as education and competitiveness, must also be enhanced. Ultimately, an increase in education, full-time labour market experience, and occupational status will lessen the wage gap between men and women.

E. Conclusion

According to the above study, the average Indonesian fisherman is between 35 and 44 years old, has a primary school education, lives in a family with three to five members, is working in the informal sector, and works fewer than 30 hours per week. The workers with a diploma in education between the ages of 35 and 44 with the greatest average income are those with an educational degree. In all variable categories, descriptive data reveal a wage discrepancy between women and men. The same conclusion is reinforced by multiple linear regression analysis. The MLR model also indicates that age, working hours, and years worked have a positive and statistically significant relationship with worker compensation. In addition, the interaction model between education and job status generates important factors. However, there is a gap in income between men and women at all interaction points, despite the same pattern. In addition to schooling, job status also produces a gender-based wage disparity, with formal and informal women employees earning less than males, particularly at the diploma level and higher. This issue is one of the causes of gender inequality, which results in women's subordination to males, work at lower levels, longer hours, and lower wages. In the fisheries sector, for instance, women are assigned to unpaid/household-based and low-paying positions. The role and contribution of women in fishing are fairly significant. All operations in the fisheries sector can accomplish strategies and interventions for growth and improved management by acknowledging the role of women. In addition, increasing women's educational attainment is essential and needs to be complemented with expanded involvement in the labour market. The government program and policy formulation must be adapted to the needs and roles of women in the fisheries sector at both the community and government levels. In addition, women should participate in all levels of decision-making, including resource management, integration into fisheries development, and others.

Acknowledgement

This paper is an expanded version of the Research Communication Skills assignment piece submitted by the author for the MSc Demography post-
graduate course at the University of Southampton in England. We thank to Prof. Gabriele Durrant for providing some contributions to this article.[s]

References


development/2015/oct/20/two-thirds-of-worlds-illiterate-adults-are-women-report-finds.


This page has been intentionally left blank.