Determinants of Labor Demand in the Islands (A Study of 11 Regencies/Cities in Maluku Province)

Hendri D. Hahury*, Hermi Oppier, Terezia V. Pattimahu, Imanuela G. Malawau

Abstract: The composition of regional products according to economic sectors may generally reveal a region’s economic structure, therefore the number of workers employed in the economic sector can be interpreted as an indicator of the economic sector’s workforce absorption potential. The purpose of this study is to identify and assess determinants of labor demand (open unemployment, Human Development Index (HDI), and minimum wage) in the islands, specifically Maluku Province which consists of 11 regencies / cities. This study employed a descriptive-quantitative method, employing a multiple linear regression analysis. The results show that the open unemployment, HDI, and minimum wage have a negative and insignificant impact on the labor demand in the islands. In fact, labor demand issues in the islands were more complex than in continental areas, such as regional egocentrism, which expected the “local community youth” to have priority in the labor demand yet they had no skill mastery. As a result, investing in education through “specialization” of labor was predicted to be critical to the labor absorption.

Keywords: Open Unemployment; Human Development Index; Minimum Wage; Labor Demand; and Islands

Introduction

The development of a high population does not always have a positive impact on a region. If it is not followed by an increase in the quality of reliable human resources, it can actually be a factor inhibiting the success of the regional economic development. The economic development with a high population yet limited job opportunities can eventually cause unemployment. Moreover, islands have different characteristics from continental areas, especially in terms of its population size and available job opportunities. Unemployment is a labor-related issue that results from an imbalance between labor demand and labor supply. Indonesia has a population of 275 million people, with 62.28% of them are in the productive age group. However, most of them continue to struggle with significant unemployment (Heryani & Siagian, 2023; Kurniawati & Sugiyanto, 2021). The Statistics Indonesia show that there were 8.40 million unemployed individuals in February 2022. According to the statistics, the unemployment in Indonesia rises year after year, particularly in 2020 when the COVID-19 pandemic caused millions of people to lose their jobs.

Increasing unemployment will waste resources and the potential of the existing labor,
as well as becoming a major source of poverty, impeding the economic development (Budhijana, 2019; Hilmi et al., 2022; Putri & Yuliana, 2023). Therefore, improving the job opportunities in order to compensate for the increased rate of young population entering the labor market is one approach to address this issue (Abidin, 2021; Mulyadi, 2017). Thus, job creation represents the government’s achievement of efforts in the development to increase purchasing power, resulting in prosperity. However, the availability of dependable labor constantly correlates with the amount of education pursued. In fact, education has a vital role in shaping the human resources’ ability to adopt technology while expanding production capacity in order to promote long-term growth and development (Aminuddin et al., 2021; Atmaja, 2018).

Further, the education is inextricably linked to the Human Development Index (HDI) – one measure of a country’s or region’s performance in the field of human development, such as the physical and non-physical quality of the population (Statistics Indonesia, 2012; Andaiyani, 2012). There are three indicators of HDI, including health, education level, and economy. The physical quality is measured by life expectancy, and the non-physical quality is reflected in the average length of time the population has spent in school, literacy rates, and economic capacity, specifically real expenditure per capita. The HDI provides a comprehensive picture of the entire level of development progress and affects all levels of humankind as a result of a region’s development activities.

However, the Statistics Indonesia shows that the HDI of Maluku Province consistently declines from year to year. Between 2010 and 2021, the Maluku Province’s HDI fluctuated and in 2022, it only reached 69.71%. The fluctuations have been inversely proportional to the increases in the life expectancy, educational quality, and people’s purchasing power. Wages or income are also one indicator that can provide an overview of the working population’s level of welfare. Minimum wage increases are driven by economic growth, which gets better year after year. The challenge for emerging countries does not only lies in the increasing number of unemployment, but also in their proportion of the total labor.

Throughout the time, the demand of job opportunities change. The cause of these changes may not be strictly related to the time, but also to changes in the economy. The changes in the economic condition affect the job opportunities simultaneously. In cases of increasing economy, the labor absorption increases, and vice versa where if the economy decreases or stagnates, the job opportunities decline, and the unemployment rate increases. To anticipate this issue, every development initiative must be constantly aimed at increasing the job opportunities and business prospects.

Labor demand is highly influenced by various factors. There are previous studies mentioned that these factors include the economic growth (Hasanah, 2022; Sari et al., 2023), minimum wage (Kurniawan & Aisyah, 2023; Saraswati et al., 2022), number of business involved (Kriskurnia & Wijanarko, 2023; Silfiana, 2023), job opportunities for the female workforce (Kusumaningrum, 2020; Utami & Ariusni, 2023), and HDI (Pratama & Hidayah, 2023; Safitri & Desmintari, 2022). However, there are currently few research examining the determinants of labor demand in the islands as they have different characteristics from those in thecontinental areas, as described earlier. Furthermore, in several areas, regional
sentimentality remains strong, making the urge to favor the “local community youth” is the most important consideration.

For these reasons, the research questions of this study are as follow: “How does the open unemployment affect the labor demand in Maluku Province?”; “How does the HDI affect the labor demand in Maluku Province?”; and “How does the minimum wage affect the labor demand in Maluku Province?”

**Research Method**

This study employed a descriptive quantitative method. The quantitative method presented the data primarily in the form of numbers, and the data analysis was statistical in nature, with the goal of examining the proposed hypotheses (Sugiyono, 2016). This study was also a library research, conducted by utilizing the literature (libraries) in the form of books, journals, or reports on past study findings on the job opportunities. The data used in this study was a secondary data obtained from the literature studies such as books, scientific works, official papers, research findings in the form of reports, and etc, and was collected from two sources: internal and external. In this study, the internal secondary data was obtained from the Statistics Indonesia, while the external secondary data was obtained from government agencies, journals, publications, periodicals, and the internet that were relevant to the research variables. Further, this study conducted a multiple regression analysis to analyze the data. A partial test (t-test) was also conducted to investigate the influence between the variables. The functions and equations for the multiple linear regression are as follows:

\[ \text{LD} = f (\text{OU, HDI and MG}) \]  

Note:
- \( \text{LD} \): Labor Demand
- \( \text{OU} \): Open Unemployment
- \( \text{HDI} \): Human Development Index
- \( \text{MG} \): Minimum Wage

The above function was then specified into a regression model as follows:

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu \]  

Note:
- \( Y \): Labor Demand (in %)
- \( \alpha \): Intercept
- \( X_1 \): Open Unemployment (in %)
- \( X_2 \): HDI (in %)
- \( X_3 \): Minimum Wage (in %)
To ensure precise calculations and reduce human error, the data was analyzed statistically using EViews program with a significance level of 95% ($\alpha = 0.05$). Meanwhile, the tests conducted included classical assumption test, multiple linear regression test, statistical test, and coefficient of determination (R2) test.

**Result and Discussion**

The total population of Maluku Province in 2023 was 1,686.69 individuals, divided across 11 regencies/cities. In terms of workforce, the total workforce in Maluku Province in 2023 reached 1,795 individuals, with 876,813 (63.08%) of them actively working and the remaining 36.92% were still unemployed (Badan Pusat Statistik, 2022). The employed individuals mostly worked in the agricultural sector (56.28%), followed by the services and trade sectors (13.57% and 12.63%, respectively).

**Classical Assumption Test**

To determine whether the multiple linear regression model utilized in this study fit the classical assumptions, an econometric evaluation was performed. The econometric evaluation consisted of three tests, including normality test, multicollinearity test, and autocorrelation test.

**Multicollinearity Test**

The assumption of a multiple regression model implicitly assumed that the model’s independent variables were uncorrelated. Regression coefficients were typically understood as a measure of change in the dependent variable when one of the independent variables increased by one unit and the other independent variables remained constant. However, if the independent variables had a linear correlation, this assumption could not be supported. To test for multicollinearity in the regression model, the tolerance and variance inflation factor (VIF) approach was used. Furthermore, the VIF score was suggested to be lower than 10 to indicate no signs of multicollinearity. In this study, the results show that none of the independent variables have a tolerance value of $<1$. Therefore, it could be concluded that the regression model utilized has no correlation between them neither signs of multicollinearity.

**Autocorrelation Test**

The autocorrelation test was a classical assumption test that determined a correlation between the confounding error for period t (residual error t = et) and the confounding error for the previous period (residual error t-1 = et-1). The Durbin-Waston value was used for autocorrelation testing.
Table 1 Results of Autocorrelation Test (Durbin-Watson)

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R-Squared</th>
<th>Adjusted R-Squared</th>
<th>Std. Error of Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.772^a</td>
<td>.528</td>
<td>.136</td>
<td>2.09531</td>
<td>1.549</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), MINIMUM WAGE (X3), HDI (X2), OPEN UNEMPLOYMENT (X1)
b. Dependent Variable: LABOR DEMAND (Y)

The Durbin-Watson test was conducted to assess the symptoms of first-order autocorrelation. According to the calculated results, the Durbin-Watson (DW) value is 1.549, the upper limit value (du) is 1.676, while the value of (4 - du) is 2.324 (4 - 1.676). The above calculation results show that there are no signs of autocorrelation in the regression model, allowing the proposed regression model to be used for further analysis.

Heteroscedasticity Test

The method used for the heteroscedasticity test was by examining the plot graphic of the predicted value of the dependent variable (ZPRED) and the residual (SRESID). If there was a pattern, such as the dots forming a regular pattern (wavy, widening, then narrowing), it could be concluded that there was heteroscedasticity; otherwise, if there was no clear pattern and the dots were spread above or below the number zero on the axis Y, there was no heteroscedasticity. The test was performed utilizing the scatterplot graphic method. In this study, the results show that there is no heteroscedasticity, since the dots do not create a pattern with the number 0 on the axis Y, implying that the existing model does not experience heteroscedasticity. The regression model that fits the multiple classical assumptions, as explained in the preceding section, appears to have no signs of deviation from the classical assumptions, and hence can be utilized for further analysis.

Multiple Linear Regression Test

This study examines the impact of open unemployment, HDI, and minimum wage on the labor demand in Maluku Province, as well as the validity of the hypotheses proposed in this study.

Table 2 Results of Multiple Linear Regression Test

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>93.860</td>
<td>1.377</td>
<td>.777</td>
<td>68.153</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Open Unemployment (X1)</td>
<td>-3.388E-7</td>
<td>.000</td>
<td>-1.671</td>
<td>.139</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HDI (X2)</td>
<td>-.281</td>
<td>.390</td>
<td>-.335</td>
<td>-.722</td>
<td>.494</td>
</tr>
<tr>
<td></td>
<td>Minimum Wage (X3)</td>
<td>-.182</td>
<td>.432</td>
<td>-.457</td>
<td>-.2.345</td>
<td>.057</td>
</tr>
</tbody>
</table>

a. Dependent Variable: LABOR DEMAND (Y)
Based on the multiple linear regression equation formula, the linear regression equation utilized is as follows:

\[
\text{Labor Demand} = 93.860 - 3.389 X_1 - 0.281 X_2 - 0.182 X_3 + e
\]

Note:
1. Constant
   The constant value is 93.860, implying that if there are no open unemployment, HDI, or minimum wage, the labor demand would be 93.9%.
2. Open Unemployment (X1)
   The regression coefficient value of \(-3.389\) indicates that every 1% increase in the open unemployment reduces the absorption rate of labor demand by \(-3.4\)% in Maluku Province.
3. HDI (X2)
   The regression coefficient of \(-0.281\) indicates that every 1% increase in the HDI reduces the absorption rate of labor demand by \(-0.281\)% in Maluku Province.
4. Minimum Wage
   The regression coefficient value of \(-0.182\) indicates that every increase of IDR 1 of the minimum wage reduces the absorption rate of labor demand by \(-0.182\)% in Maluku Province.

Statistical Test
Partial Test (t-Test)
The t-test was performed to determine the constant significance of each independent variable, which included the open unemployment (X1), HDI (X2), and minimum wage (X3), on the labor demand (Y) with a 5% error rate. The decision-making criteria are as follow:
1. If the value of \(t_{\text{count}} > t_{\text{table}}\), then it can be concluded that the independent variable has no significant impact on the dependent variable.
2. If the value of \(t_{\text{count}} < t_{\text{table}}\), then it can be concluded that the independent variable has a significant impact on the dependent variable.

In this study, the results show that the independent variable has a significant value greater than 0.05, indicating that the three independent variables – open unemployment (0.139), HDI (0.494), and minimum wage (0.057) – have no impact on the labor demand in Maluku Province.

Simultaneous Test (f-Test)
The simultaneous test determined how much influence the independent variable had on the dependent variable. Using the f-test, the independent variable (X) was compared to the dependent variable (Y), specifically on the absorption rate of labor demand, at a significant level (\(\alpha\)) of 5%. The decision-making criteria are as follow:
1. If the value of \(f_{\text{count}} < f_{\text{table}} (\alpha = 0.05)\), then \(H_0\) can be supported empirically.
2. If the value of \(f_{\text{count}} > f_{\text{table}} (\alpha = 0.05)\), then \(H_0\) cannot be supported empirically.
In this study, the results show that the value of F-statistics is 2.706, with a probability (F-statistics) value of 0.025 – which is higher than the significance level of 0.05. Therefore, it could be concluded that the open unemployment, HDI, and minimum wage all have a significant impact on the labor demand in Maluku Province.

**Coefficient of Determination (R2) Test**

The coefficient of determination was a statistical test used to examine the relationship between the independent and dependent variables. The coefficient of determination value could be determined by using the R-Squared value. In this study, the results show that the coefficient of determination (R2) is 0.528, indicating that the open unemployment, HDI, and minimum wage influence the labor demand by 52.8%, with the remaining 47.2% being influenced by other variables not included in the study.

**Determinants of Labor Demand in the Islands**

The development challenges in island communities were highly complex, and their egocentrism remained prevalent. In addition, the challenges in the regional development included the utilization of natural and human resources, which frequently restricted the government’s efforts to promote the community welfare. Maluku Province, as islands, naturally had more water or ocean area than land area. This geographical condition created unique labor demand challenges. Furthermore, it had long been assumed that individuals who lived and worked on the islands and coastal areas would make a living in the fishing industry, with fishermen providing a source of income for their families.

In fact, in Maluku Province, most of community members were civil servants, the Indonesian National Defense Force (Tentara Nasional Indonesia, TNI) or the Indonesian National Police (Kepolisian Negara Republik Indonesia, Polri). This study finds many determinants of the labor demand, such as the economic growth, minimum wage, number of business units involved, job opportunities for the female workforce, and the HDI. Further, the results show that the labor demand in Maluku Province reaches 52.8%, influenced by the open unemployment, HDI and minimum wage. Partially, these three variables have no impact on the labor demand in Maluku Province. However, on the contrary, simultaneously these three variables have a significant impact on the labor demand in Maluku Province.

Further, this study finds that the unemployment was the result of the workforce being underutilized owing to the limited job opportunities. The higher economic growth stimulated the economic structures. As a result, the consumption, manufacturing, and distribution would all increase. As the output increased, more power was required to meet the production requirements. Positive economic growth would also attract investment. This would make it easy to establish new business units. The impact would also be reflected in the employment sector, with the unemployment decreasing and the labor force participation increasing.

Meanwhile, the unemployment in Maluku Province changed substantially between 2010 to 2022. It was not only caused by limited labor market capacity or job opportunities.
The absorption of working people is due to the demand for labor. Therefore, labor absorption can be said to be labor demand. The “bargaining” power of the labor in Maluku Province for the job opportunities was severely restricted by the “competition” with the labor from outside Maluku Province who had higher qualities. In the islands, particularly in Eastern Indonesia, the sentiment of being a “local community youth” in order to be prioritized in the recruitment process remained strong, both in the private and public sectors. This condition was mainly caused by socio-cultural trends that promoted and encouraged this behavior, resulting in a conservatism and resistance to the entry of labor from other regions. As a result, individuals, communities, institutions, and agencies (both government and non-government) must reorient themselves on these concerns in order to observe changes in relevant attitudes and responses to compete by increasing the self-capacity.

At this point, “specialization” in the workplace was essential for the labor in Maluku Province. As a long-term investment, the education could facilitate this “specialization”. Investing in the education would improve the quality of human resources, as indicated by increasing individual knowledge and abilities which were expected to result in an increase in the work productivity (Hardianto & Nofriser, 2022; Yasin, 2021). The increased productivity could have an impact on the job opportunities, as it reduced the production costs per unit of goods and eventually a lower price per unit. If the commodity price declined, the commodity demand would increase, encouraging entrepreneurs to increase the labor demand, hence lowering the high unemployment rate.

Furthermore, the HDI was identified as one of the primary metrics included in the basic pattern of regional development (Mukaromah et al., 2023; Wana & Juniartika, 2021). This suggested that the HDI played a significant role in the regional development management. The function of HDI and other human development indicators would be critical for implementing focused planning and development (Syafullah & Malik, 2017). In this study, the results suggest that the HDI in Maluku Province has a negative and insignificant impact on the labor demand. The results of partial statistical test suggest that the HDI has a regression coefficient of \(-0.281\). This value is not significant at the 0.494 level, with a p-value of 0.005. This finding is crucial, as in general, when a region’s HDI included components of education, health, and a good standard of life, the absorption of labor demand would grow. However, this is in sharp contrast to the findings of this study, which show that the HDI increases as the labor absorption falls. This finding suggested that, despite the increased educational level, improved health, and reasonable living conditions, they were unable to meet the labor demand in Maluku Province.

In addition, the minimum wage was also highly related to the minimum compensation earned by individuals, hence it had a significant impact on the labor welfare. According to (Boediono, 2014), raising the minimum wage could also raise the population’s income, improve the labor welfare, and ultimately reduce the poverty. The minimum wage was a salary that served as a minimum standard for delivering the compensation, mostly given by the company owners, capital owners, and industrial participants to their employees (Rusniati et al., 2018).
In this study, the results show that the minimum wage has no significant influence on the absorption of labor demand in Maluku Province, with a significance level of 0.057 (> 0.005). In fact, the average minimum wage in Maluku Province increased annually, albeit at different rates. It could be concluded that despite the annual increases in the minimum wage in Maluku Province, the local community did not try to look for better job opportunities for their source of income. The local community might consider the increase in the minimum wage to be insufficient in comparison to the increase in their daily household needs, which consistently fluctuated from time to time.

Conclusion

Based on the research findings and discussion explained earlier, therefore, it can be concluded that, the open unemployment, HDI, and minimum wage have a negative and insignificant impact on the labor demand in Maluku Province. Each independent variable has a significance value of higher than 0.05.

The issues of labor demand in the islands are more complex than in the continental areas, including the regional egocentrism which expected the “local community youth” to have priority in the labor demand, yet they had a lack of skill mastery. Investing in the education with a focus on the “specialization” is such a significant factor in increasing the labor demand in the islands.

References


