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THE EFFECT OF THE LABOUR FORCE AND INVEST ON PERFORMANCE IN THE FISHERIES SECTOR IN THE CITY OF NORTH JAKARTA

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ABSTRACT

This study aims to determine the effect of the number of the workforce and investment on performance in the fisheries sector in North Jakarta. This research was conducted in North Jakarta in August 2019. The method used was a quantitative descriptive method using periodic data (time series). Secondary data obtained through desk study study to collect information about research that has been done before and the latest developments regarding the number of labor force, investment and PDRB in the fisheries sector in general. Data analysis used correlation test, multiple linear regression analysis, F and t test, and coefficient of determination. The results showed that the fisheries investment and PDRB of the fisheries sector had a significant impact on the performance of the fisheries sector.

Keywords : Investment, Labor Force, PDRB, Performance

PRELIMINARY

North Jakarta is part of the Special Capital Region of Jakarta, with a boundary in the northern part of the Java Sea, in the southern part of West Jakarta, Central Jakarta and East Jakarta, in the eastern part of East Jakarta and Bekasi Regency, and in the west part of West Jakarta and Tanggerang Regency. Administratively, the City of North Jakarta is headed by a Mayor with a population of 2018 of 1,797,191 people (BPS 2018). Population density in North Jakarta is 11,704.34 inhabitants / km^2, with an area of 146.66 km^2, 6 sub-districts, 31 villages, 431 and 5,027. (BPS 2018).

Labor according to Law No. 13 of 2003 concerning manpower, that manpower or manpower includes people who are already or are working, who are looking for work and who are doing other work such as school and household care (Then 2015). The concept of employment is seen from the age limit, for census purposes in Indonesia using a minimum age limit of 15 years and a maximum age limit of 55 years. The number of the workforce in 2017 was 907,629 people, including the number of those working at 838,047 people, and the number who were looking for work was 69,528 people. The number of non-workforce in 2017 amounted to 436,921 people, including for the number of those studying at 138,592 people, taking care of households at 245,713 people, and others at 52,616 people (BPS 2018).

Based on the number of forces and the value of investment in 2017 in the City of North Jakarta can affect performance in the City of North Jakarta as said by Budiharsono (1996) that there are several factors that can affect performance in an area including natural resource factors which include natural resources that can used both directly and indirectly as well as the availability of stock and potential human resources (labor force). The next factor is the economic factor because this factor plays a major role in the size of investment in a region, and this factor also affects interest rates, the contribution of economic sectors, market demand, infrastructure availability and the level of technology. Government policies can also affect the performance of an area because it is related to regulations that are applied in an area.

METHOD

The location of the study was conducted in the City of North Jakarta, the time of data collection and research was carried out in August 2019. This research consisted of several stages, namely the plan of research proposal material, preparation of research proposals and instruments, research proposal seminar, data collection process in the field, and processing data.

Methods The research was conducted using data collected both through decision surveys which were then analyzed quantitatively and presented descriptively (Rizal 2013). The data used consists of secondary data. Secondary data was obtained through desk study studies to collect information on previous research and the latest developments regarding the number of labor force, investment, and GRDP in the fisheries sector in general. Secondary data used include time series data on the number of labor force and investment in the fisheries sector.

The data analysis method used in this study is a quantitative description method, the data obtained are analyzed descriptively presented in the form of tables, writing, diagrams or graphs. Descriptive analysis is a form of research data analysis to describe or analyze the results of research, not used to make broader conclusions.

Model Testing

a. Correlation Test

Correlation test is used to determine the degree of relationship and contribution of independent variables to the dependent variable. In this study a simple correlation is used that is the correlation technique that is the Product Moment technique. Product moment correlation technique is a correlation between independent variables and dependent variables. Numbers that show the direction and magnitude of the relationship between an independent variable and a dependent variable

are called correlation coefficients.

Correlation analysis can be calculated using the Pearson Product Moment correlation formula (Riduwan, 2011) as follows:

$$r_{xy} = \frac{n\,(\Sigma\, XY) - (\Sigma\, X)(\Sigma\, Y)}{\sqrt{[n\,\Sigma\, X^2 - (\Sigma\, X)^2][n\,\Sigma\, Y^2 - (\Sigma\, Y)^2]}}$$

Keterangan :

Information :

r_{xy} : Correlation coefficient value
n : Number of sample members
X : Independent variable
Y : Dependent variable

R values can range from -1 through 0 to +1 ($-1 \leq r \leq +1$).

1. If the value of r = 0 or close to 0, then the relationship between the two variables is very weak or there is no relationship at all
2. If the value of r = +1 or close to 1, then the correlation between the two variables is said to be positive and very strong. The relationship between the two variables is a positive correlation (direct correlation), meaning that the increase in variable X will be followed by an increase in the variable Y or vice versa.
3. If the value of r = -1 or close to -1, then the correlation between the two variables is said to be negative and very strong. The relationship between variables is negative correlation (unrelated correlation), meaning that the increase in the variable will be followed by a decrease in the variable Y or vice versa (Sudjana 2004).

The correlation coefficient above is used if the data is normally distributed, if the data are not normally distributed then nonparametric statistics are used. To calculate the correlation in this study, the authors used Microsoft Excel 2013 to facilitate data processing.

a. Multiple Linear Regression Analysis

According to Hasan (2008), multiple linear analysis is where the dependent variable (Y) is connected or explained by more than one variable, maybe two, three, and so on the independent variables (X1, X2, X3, ..., Xn) but still shows linear relationship diagram. The addition of the independent variable is expected to better explain the characteristics of existing relationships even though there are still variables that are ignored. The general form of multiple linear regression equations can be written as follows.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + ... + bkXk + e$$

Information:

Y = dependent variable
b1, b2, b3, ..., bk = regression coefficient
X1, X2, X3, ..., Xk = independent variables
E = disturbance term, meaning the values of other variables not included in the equation. This value is usually ignored in calculations.

The estimated value of Y (prediction Y) can be done by replacing the X variable X with certain values. If a dependent variable is associated with two independent variables then the multiple regression equation is written:

$$Y = a + b_1X_1 + b_2X_2$$

Information:

Y = dependent variable (GRDP of North Jakarta City fisheries sector)
X_1 = independent variable (Number of labor force in the North Jakarta City fisheries sector)
X2 = independent variable (Investment in the fisheries sector of North Jakarta Regency)
a, b_1, b_2 = multiple linear regression coefficients
a = value of Y, if X1 = X2 = 0

b_1 = magnitude of increase or decrease of Y in units, if X1 increases or decreases by one unit and X_2 is constant

b_2 = magnitude of increase or decrease of Y in units, if X2 increases or decreases by one unit and X1 is constant

b_1 and b_2 are also called partial coefficient regression (partial coefficient regression) and are often written as $b_1 = b0_{1.2}$ and $b_2 = b0_2$. The value of the coefficients a, b_1, b_2 can be determined in several ways as follows.

a. F test and T test

According to Wibowo (2012), the accuracy of the sample regression model in its actual interpretation can be measured by its goodness of fit. Goodness of fit in the regression model can be measured from the value of F statistical analysis, the statistical value of t, and the coefficient of determination.

1. Test (F)

The F statistical test basically shows whether all the independent or independent variables entered in the model have a joint influence on the dependent variable.

Testing criteria:

1. Fcount ≤ Ftable, then Ho is accepted and H_1 is rejected, it means that all independent variables (X) do not significantly affect the dependent variable (Y) and the equation cannot be accepted as estimator
2. Fcount> Ftable, then Ho is rejected and H1 is accepted, meaning that all independent variables (X) are simultaneously a significant explanation of the dependent variable (Y) and the equation can be accepted as an estimator.

The calculated F formula is as follows (Makridakis and Wheelwright, 1999).

$$Fhit = \frac{\text{MS that can be explained}}{\text{MS that can't be explained}} \text{ with } (k, N-K-1) \text{ df}$$

$$= \frac{\Sigma(Y-Y)^2 / (k)}{\Sigma(Y-Y)^2 / (N-k-1)}$$

2. Test (t)

T test shows how far the influence of one independent variable individually in explaining the variation of the dependent variable. Test of the statistical value of t is a test of the significance of individual parameters. The static value of t indicates how far the influence of the independent variable individually on the dependent variable.

Hypothesis

Formulation:a.

a. H_o : $b_i = 0$

b. H_o : $b_i \neq 0$

Test Criteria:

a. t arithmetic ≤ t table, then Ho is accepted and H1 is rejected, meaning that the independent variable is not an explanatory variable.

b. t arithmetic> t table, then Ho is rejected and H1 is accepted, meaning that the independent variable is an explanatory variable dependent.

This formula is as follows (Makridakis, 2011).

$$t_{hit} = \frac{bj - (\beta j)}{se_{(bj)}}$$

Information:
bj = estimated jth coefficient
βj = hypothesized jth parameter

b. Coefficient of Determination (R^2)

The coefficient of determination measures how much the model's ability to explain the variation of the dependent variable. The coefficient of determination is between zero and one, a small R^2 value means that the ability of the independent variables to explain the variation of the dependent variable is very limited and a value close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable (Kuncoro 2003).

RESULTS AND DISCUSSION

Based on its geographical position, the City Administration of North Jakarta has borders to the north stretching the coast of the Java Sea from West to East along a 35 km stretch of 13 rivers, while in the south it borders West Jakarta, Central Jakarta and East Jakarta. the east is bordered by East Jakarta and Bekasi Regency, the west is Tangerang Regency and West Jakarta. North Jakarta Administrative City based on Governor's Decree Number 171 of 2008, has an area of 146.66 km^2. North Jakarta stretches from West to East along approximately 35 km, jutting inland between 4 to 10 km. Altitude from sea level between 0 to 2 meters, from certain places below sea level which consists mainly of brackish water swamps / ponds (BPS North Jakarta 2019).

Administratively, North Jakarta is an administrative city in DKI Jakarta with regional boundaries:

North : Java Sea, Kepulauan Seribu
East side : Bekasi Regency
South : West Jakarta, East Jakarta, South Jakarta
West side : Tanggerang Regency

Effect of Total Labor Force and Investment on Fisheries Sector Performance

The data analysis is processed using SPSS 16 Software, to obtain the maximum regression results, the Correlation Test, F Test and Multiple Linear Analysis and Determination Coefficient Test are performed.

Correlation test

Correlation test is used to determine the degree of relationship and contribution of independent variables to the dependent variable. In this study a simple correlation is used that is the correlation technique that is the Product Moment technique. Product moment correlation technique is a correlation between independent variables and dependent variables. Numbers that show the direction and magnitude of the relationship between an independent variable and a dependent variable are called correlation coefficients

	Fisheries PDRB	Fisheries Investment	Workforce
Fisheries PDRB	1.000	.955	.647
Fisheries Investment	.955	1.000	.669
Workforce	.647	.669	1.000

From the table above, it can be concluded that the correlation between fisheries GRDP with fisheries investment is 0.955. This shows that the correlation between Fisheries Investment and fisheries GRDP is positive and very strong. The correlation between the workforce and fisheries GRDP is 0.647. This shows that the collaboration of the work force and the GRDP of the fishery is positive and strong.

F Test

The F test is used to determine whether the independent variable has a real influence on the performance of the fisheries sector. The results of the F test analysis can be seen in the following table:

Variasi	Df	Mean Square	F	Signifikan
Regression	2	4,382E+20	15,505	0,026
Residual	3	2,826E+19		
Total	5			

Based on the table, it can be seen that it is significant at 0.026 and smaller than α = 0.05. The F-count of 15.505 is known to be greater than the F-table of 0.05218, thus Ha is accepted and Ho is rejected. This shows that the independent variables examined together have a significant effect on the performance of the fisheries sector in North Jakarta having a high level of trust. This shows that the total workforce and investment in the fisheries sector together have a significant effect on the fisheries sector in North Jakarta.

Test t

The t test aims to determine the effect of individually examined independent variables on the performance of the fisheries sector in North Jakarta. The results of the t test analysis can be seen in the table as follows:

Variabel	Regression Coefficient	t-hit	Significance
Workforce	73118,131	0,057	0,946
Fisheries Investment	19,609	4.096	0,026

From the table above it can be seen that the fisheries investment variable significantly influences the performance of the fisheries sector in North Jakarta. This is indicated by the significant value of fisheries investment smaller than α = 0.05, if using the t-table obtained 2.9199 t-value of the fisheries investment is greater so that the investment variable has a significant effect. The variable number of fisheries workforce on the performance of the fisheries sector in North Jakarta has a significant effect, this is indicated by the significant value of the variable which is greater than the value α = 0.05.

Multiple Linear Analysis

The method of multiple linear regression analysis is used to see the effect of the number of labor force and investment on the performance of the fisheries sector. Multiple linear regression analysis can be seen in the table as follows:

Model	B	Std. Error	t	Sig
Constant	2,155E+11	2,312E+10	9,321	0,003
Workface	73118,131	1275852,91	0,057	0,958
Total Fisheries Investment	0,0731	0,045	4,098	0,026

By looking at the table above we get the form of multiple linear regression equations as follows:

$$\mathbf{Y = 2{,}15E{+}7 + 73118{,}131X_1 + 0{,}026X_2}$$

The value of the regression coefficient on the independent variable illustrates if it is estimated that the independent variable increases by one unit and the value of the other independent variables is estimated to be constant or equal to zero, then the value of the dependent variable is biased upward or downward biased according to the regression coefficient of the independent variable.

Determination Coefficient Test

The coefficient of determination test measures how far the model's ability to explain independent variables. The results of the coefficient of determination test can be seen in table 18 as follows:

Model	R	R Square	Ajusted R Square	Std. Error of the Estimate
1	.955[a]	.912	.853	5.316

Based on the table it is known that the correlation between variations of the dependent variable of R 0.955 means the relationship between the variable number of the workforce, fisheries investment, and the performance of the fisheries sector is in the good category. Predictors explain the variables used in the model, namely the number of fisheries workforce and fisheries sector investment. For the coefficient of determination of 0.912 which means that the performance variable of the fisheries sector can be explained by the independent variable that is the variable number of the workforce of fisheries and fisheries sector investment is 95.5% and the rest are other factors not included in the regression.

CONCLUSION

Based on the analysis of the factors affecting the performance of the fisheries sector in the City of North Jakarta, the conclusions obtained are the factors that influence the performance of the fisheries sector including (1) investment in the fishing sector, (2) the workforce of the fisheries sector. These two factors include investment and the labor force in the fisheries sector in North Jakarta City are related but the investment has a significant effect and the workforce has no effect.

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