



## Prediction of International tourism By Analyzing Employers in Indonesia From 2004 – 2017

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### Abstract

Individuals become tourists when they voluntarily leave their normal surroundings, where they reside, to visit another environment, these individuals will usually engage in different activities, regardless of how close or how far this environment (destination) is. Therefore, tourists are visitors, and what they do whilst visiting another place may be considered as tourism. Back in 1963, the United Nations Conference on International Travel and Tourism agreed to use the term 'visitors' (other than residents) to describe individuals visiting another country. An employer is comprised of the owners of a private, for-profit organization, or those who control a non-profit or public sector organization. Executive, managerial, and supervisory employees are also often considered part of an 'employer' as they frequently act as an agent of their employer in managing other employees. Employers are typically modeled as maximizing profits. This study uses simple linear regression analysis to predict and predict changes in the value of certain variables when other variables change. Correlation is one of the statistical analysis techniques used to find the relationship of how strong the relationship between one variable with other variables that are quantitative. By using a linearity test where  $f\text{-count} > f\text{-tabel}$  is  $886.2824822 > 3.885$ . Then,  $H_0$  is rejected. This means that a simple linear regression analysis can be used to predict Employee Fluctuations, the total (% of total employment) (modeled ILO estimate) by analyzing the rate of International tourism, expenditures (current US \$) in Indonesia. Obtained a simple linear regression equation is  $Y = 2.447596544 + 9.03792E-11X$ , the relationship between the independent variables and the dependent variable above is 0.672965 with the correlation is good correlation, the scale ranges from 0.55 to 0.75. ie where  $t\text{-count} > t\text{-table} = 3.151680 > 2.179$ , then  $H_0$  is rejected, meaning that there is a large (significant) influence between the Employers on the rate of International tourism, expenditure (current US \$) in Indonesia, the higher the Employers then the greater the International tourism, expenditure (current US \$) in the State of Indonesia.

### Keywords

International tourism, Employers, Simple Linear Regression, Correlation

### Introduction

An employer is a purchaser of labor. At its core, an employer is comprised of the owners of a private, for-profit organization, or those who control a non-profit or public sector organization. Executive,

managerial, and supervisory employees are also often considered part of an 'employer' as they frequently act as an agent of their employer in managing other employees. Employers are typically modeled as maximizing profits [1-2]. The Anglo-American shareholder model of corporate governance reflects this importance of profit maximization. In this system, shareholders are residual claimants; all other stakeholders are seen as receiving fixed payments such as wages and salaries for their services. As such, shareholders are viewed as single-handedly bearing the risk of making a profit or loss and economic performance will consequently be optimized when corporate decisions maximize shareholder value [3]. Maximizing profits and maximizing shareholder value are therefore equivalent.

Individuals become tourists when they voluntarily leave their normal surroundings, where they reside, to visit another environment. These individuals will usually engage in different activities, regardless of how close or how far this environment (destination). Therefore, tourists are visitors, and what they do whilst visiting another place may be considered as tourism. Back in 1963, the United Nations Conference on International Travel and Tourism agreed to use the term 'visitors' (other than residents) to describe individuals visiting another country. This definition covered two classes of visitor: Tourists were classified as temporary visitors staying at least 24 hours in a destination. If they are travelling for recreation, health, sport, holiday, study or religious purposes, their visit could be categorised as leisure. Alternatively, excursionists, including cruise travellers may be considered as temporary visitors, if they stay in a destination for less than 24 hours. However, these definitions fail to take into account the domestic tourists. In 1976, the Institute of Tourism (which later became the Tourism Society) suggested that tourism is the temporary short-term movement of people to destinations outside the places where they normally live and work. Therefore, tourism includes the movement of people for all purposes, including day visits or excursions.

### Literature Review

- **Simple Linear Regression Analysis**

Simple linear regression analysis can be used to predict changes in the value of certain variables when other variables change. It is said simple regression, because it consists of one independent variable as a predictor, then a simple linear regression equation is used. Regression analysis is a relationship that is obtained and expressed in the form of mathematical equations which states the functional relationship between variables.

According to Drapper and Smith [4], regression analysis is an analytical method that can be used to analyze data and draw meaningful conclusions about the relationship of one variable's dependence on another. Regression is divided into 2 namely, simple linear regression analysis and multiple linear regression. Simple linear regression analysis is used to get a mathematical relationship in the form of an equation between the dependent variable and the independent or single variable. Simple linear regression analysis is a linear relationship between one variable, i.e., independent or independent variable (X) with the dependent variable or dependent variable (Y). This analysis is to determine the direction of the

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Received: March 10, 2021 Accepted: April 22, 2021 Published: April 29, 2021

relationship between the independent variable with the dependent variable whether each independent variable is positively or negatively related and to predict the value of the dependent variable if the value of the independent variable has increased or decreased. The data used is usually interval or ratio scale. The simple linear regression equation is as follows:

$$Y = \alpha + bX$$

Where :

- Y = Dependent variable (predicted value)
- X = Independent variable
- $\alpha$  = Constants (the value of Y is equal to  $\alpha$  if X = 0)
- b = Regression coefficient (increase or decrease value).

The method that can be used to estimate or estimate the parameters of a linear model or a simple linear regression model is the least squares method and the likelihood method [5].

• **Simple Linear Correlation**

Correlation coefficient is a number that states the strength of the relationship between two or more variables, can also determine the direction of the relationship of the two variables, the correlation value is  $(r) = (-1 \leq 0 \leq 1)$ . Simple correlation analysis is an extension of simple correlation analysis. In a simple correlation analysis aims to find out how the degree of relationship between several independent variables (Variable X), with the dependent variable (Variable Y) together. For the strength of the relationship, the value of the correlation coefficient is between -1 to 1, while for the direction expressed in the form of positive (+) and negative (-).

The Pearson product moment coefficient of correlation, r is a measure of the strength of the linear relationship between two variables x and y. it is computed (for a sample of n measurement on x and y) as follows:

$$r_{xy} = SS_{xy} / \sqrt{SS_{xx} \cdot SS_{yy}}$$

Recall that a bivariate relationship describes a relationship – or correlation – between two variables, x and y. scattergrams are used to graphically describe a bivariate relationship. The concept of correlation and how it can be used to measure the linear relationship between two variables, x and y. a numerical descriptive measure of correlation is provided by the pearson product moment coefficient of correlation, r.

The intervals of the strength of the linkages are as follows: (Table 1)

Simple Correlation is a correlation that intends to see the relationship between variables (the dependent variable and one independent variable). Simple correlations relate to the inter-isolation of independent variables as well as their correlation with the dependent variable. In addition, according to Akdon and Ridwan [6], a simple correlation is a value that gives a strong influence of variables

Table 1: Nilai Korelasi Pearson.

Value of Correlation (r)	Interpretation (r)
0,00 – 0,25	Doubful Correlation
0,26 – 0,50	Fair Correlation
0,51 – 0,75	Good Correlation
0,76 – 1,00	Superior Correlation

Source : Kelley, W. D., and Jr. Rattliff, T.A., Nenadic, C. 1992.

together with other variables. The assumptions related to the simple regression analysis are:

1. The independent variables and the dependent variable have a linear relationship.
2. All variables, both independent and dependent variables, are continuous random variables.
3. Conditional distribution of values of each variable with normal distribution (multivariate normal distribution).
4. For various combinations of one variable's value, the variance of the conditional distribution of each variable is homogeneous (asumsu homoscedasticity applies to all variables).

For each variable, the observed values are not related. Simple correlation (single correlation) is a correlation consisting of one independent variable (X), and one dependent variable (Y). As for the relationship between variables can be described as follows: (Figure 1)

From the picture above the problem formulation consists of three or more problems, so simple linear correlation is used.

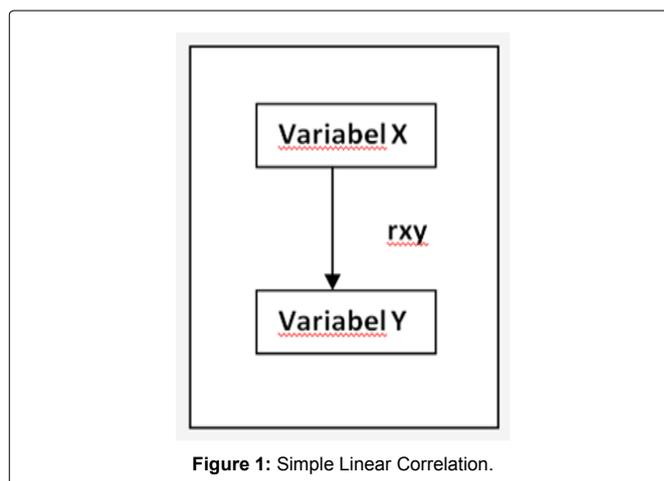


Figure 1: Simple Linear Correlation.

**Research Methodology**

**Research Types and Approaches**

This research is an Explanatory Research with a Quantitative approach, using a simple linear analysis method due to more than one independent variable. The influencing variable is called the independent variable (the independent variable) and the affected variable is called the dependent variable (the dependent variable).

**Variables in measurement**

This study consists of two independent variables, namely the International Tourism rate, expenditures (current US \$) of the Indonesian State (X) and Employers (Y), while the dependent variable.

**Data source**

The data source used is a secondary data source that is the source of research data obtained indirectly through intermediary media or related agencies / agencies [7]. In this case researchers took data from the Central Statistics Agency in 2017 on Employee Variables, total (% of total employment) (modeled ILO estimate), International tourism, expenditures (current US \$) and Interest Rates at World Bank Data, 2019.

### Data Collection Technique

Data collection techniques used to obtain relevant data from the problem under study is through library research (Library Research), namely by reading and studying the literature contained in the library, with a view to placing a theoretical foundation on the main problem being discussed (Table 2).

Is the price of capital (price of capital), where if the demand for capital (money) rises, interest will rise too, but people ask for money or borrow money not solely for investment but also for transactions (consumption) and speculation (Table 3).

### Results and Discussion

This study predicts the independent variable (Y), which is the interest rate in the future by processing and analyzing data in the past, as the dependent variable, which is the data rate of International tourism, expenditure (current US \$) of Indonesia. from 2003 to 2016. Simple linear regression analysis with the dependent variable is Employers, total (% of total employment) (modeled ILO estimate) abbreviated as (Y), and the independent variable is International tourism, expenditure (current US \$) Indonesia (X ). Data from the variables above are as follows: (Table 4)

**Table 2:** Indonesia International tourism, expenditures (current US \$) 2004 – 2017.

Tahun	International tourism, expenditures (current US\$)(X)
2004	4569000000
2005	4740000000
2006	5458000000
2007	6578000000
2008	8801000000
2009	6908000000
2010	8432000000
2011	8653000000
2012	9055000000
2013	10280000000
2014	10263000000
2015	9800000000
2016	9932000000
2017	10945000000

Source : World Development Indicators, 2019

**Table 3:** Employers Table, (Y) 2004 – 2017.

Years	Employers, total (% of total employment) (modeled ILO estimate) (Y)
2004	2.880000114
2005	3.164999962
2006	3.032000065
2007	2.986000061
2008	2.885999918
2009	2.930000067
2010	2.867000103
2011	2.911999941
2012	3.338000059
2013	3.512000084
2014	3.494999886
2015	3.573999882
2016	3.515000105
2017	3.515000105

Source : World Development Indicators, 2019

**Table 4:** Data (Y) International tourism, expenditure (current US \$) of Indonesia and (X) Employers, total (% of total employment) (modeled ILO estimate).

Years	International tourism, expenditures (current US\$) (X)	Employers, total (% of total employment) (modeled ILO estimate) (Y)
2004	4569000000	2.880000114
2005	4740000000	3.164999962
2006	5458000000	3.032000065
2007	6578000000	2.986000061
2008	8801000000	2.885999918
2009	6908000000	2.930000067
2010	8432000000	2.867000103
2011	8653000000	2.911999941
2012	9055000000	3.338000059
2013	10280000000	3.512000084
2014	10263000000	3.494999886
2015	9800000000	3.573999882
2016	9932000000	3.515000105
2017	10945000000	3.515000105

Source : World Development Indicators, 2019

In a study when analyzing data, simple linear regression is a development of simple linear regression, which can be used to predict future demand based on data analysis in the past or to determine the effect of one or more independent variables on an independent variable free (dependent) used. Application of a simple method the number of independent variables used is more than one that affects the independent independent variable [8]. From the dependent and dependent variable data table above we get a simple linear regression equation with two predictors. Start by creating a helper table as follows: (Table 5)

### Simple Linear Regression Correlation Rate

The Pearson Correlation Coefficient can be used to express the large linear relationship between two or more variables when the data is quantitative data (interval scale or ratio data) and both variables are normally distributed bivariates. the simple linear regression correlation is obtained as follows:

$$R_{X,Y} = SS_{xy} / \sqrt{SS_{xx} \cdot SS_{yy}}$$

From the analysis of the simple linear regression correlation rate equation in predicting Employee Variables, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditure (current US \$). From 2004 - 2017. With interpretation is a good correlation that ranges from 0.76 to 1.00.

### Linearity Test (F-Test) Simple Regression

#### Make a Hypothesis

Ho :Linear regression analysis cannot be used in analyzing the effect of Variable Employers, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditure (current US \$). from 2004 - 2017.

Ha :Linear regression analysis can be used in analyzing the effect of Variable Employers, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditures (current US \$) from 2004 - 2017.

**Table 5:** Helper Data Tables for finding Simple Linear Regression Equations.

Years	X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
2004	4569000000	2.880000114	2.08758E+19	8.294400659	13158720523
2005	4740000000	3.164999962	2.24676E+19	10.01722476	15002099819
2006	5458000000	3.032000065	2.97898E+19	9.193024393	16548656354
2007	6578000000	2.986000061	4.32701E+19	8.916196365	19641908401
2008	8801000000	2.885999918	7.74576E+19	8.328995527	25399685278
2009	6908000000	2.930000067	4.77205E+19	8.584900391	20240440461
2010	8432000000	2.867000103	7.10986E+19	8.219689591	24174544868
2011	8653000000	2.911999941	7.48744E+19	8.479743656	25197535488
2012	9055000000	3.338000059	8.1993E+19	11.14224439	30225590535
2013	10280000000	3.512000084	1.05678E+20	12.33414459	36103360863
2014	10263000000	3.494999886	1.05329E+20	12.2150242	35869183825
2015	9800000000	3.573999882	9.604E+19	12.77347515	35025198841
2016	9932000000	3.515000105	9.86446E+19	12.35522574	34910981042
2017	10945000000	3.515000105	1.19793E+20	12.35522574	38471676148
Σ	1.14414E+11	44.60700035	9.95033E+20	143.2095152	3.6997E+11

**Determine Value F<sub>count</sub>**

Formula :

$$F_{count} = (R_{x,y})^2 (n - m - 1) / m(1 - R_{x,y}^2)$$

$$F_{count} = 886.2824822$$

Where :

R<sub>x,y</sub> = Simple Linear Regression Correlation

n = Number of Research Samples

m = Number of Free Variables

**Determine the Value of F<sub>tabel</sub>**

Formula :

$$F_{tabel} = F_{\{(a)/(dkdenominator = n-m-1),(dk numerator = m)\}}$$

Where :

$$m = 2, n = 13, \alpha = 0,05$$

$$dk = 13 - 2 - 1 = 10$$

then ;

$$F_{tabel} = F_{\{(0,05)/(11,2)\}} = 3.885$$

➤ f<sub>count</sub> > f<sub>tabel</sub> yaitu ; 886.2824822 > 3.885 ; then, Ho rejected.

So, Simple Linear Regression Analysis can be used in predicting Employers Variable, total (% of total employment) (modeled ILO estimate) By Analyzing Growth in International tourism, expenditures (current US \$). from 2004 - 2017.

**Look for the values of constants**

Formula of constants b<sub>1</sub> ;

$$b = (n.\Sigma XY - \Sigma X.\Sigma Y) / n.\Sigma X^2 - (\Sigma X)^2$$

$$= 9.03792E-11$$

The constant value α is :

$$\alpha = (\Sigma Y - b.\Sigma X) / n$$

$$= 2.447596544$$

From the results of Simple Linear Regression analysis obtained by the equation with the formula is as follows :

$$Y = \alpha + bX$$

The result of simple linear regression analysis is obtained by the equation. Country of Indonesia By Analyzing the rate of International tourism, expenditures (current US \$). in Indonesia from 2004 - 2017. Then the simple linear regression equation is obtained as follows :

$$Y = 2.447596544 + 9.03792E-11X$$

By using the equation above we can predict Employee Variables, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditure (current US \$). from 2004 - 2017.

**Influence Test or T-test**

That is, determine whether there is a partial effect between the International Tourism Rate, expenditures (current US \$) (X) and Employee Variables, total (% of total employment) (modeled ILO estimate) (Y) and whether there is an influence on the Interest Rate (X) and Employee Variables, total (% of total employment) (modeled ILO estimate) (Y).

The influence test (t-test) between X and Y Determines the Hypothesis, is as follows;

Ho: There is no large / partially significant effect between the rate of International tourism, expenditure (current US \$) of Indonesia (X) and Variable Employers, total (% of total employment) (modeled ILO estimate) (Y).

Ha: There is a large / partially significant effect between the Interest Rate (X) and the Variable Employers, total (% of total employment) (modeled ILO estimate) (Y).

$$\text{Value of } t_{count} = r\sqrt{n-2}/\sqrt{1-(r)^2} = 3.151680551$$

Determine the value t<sub>tabel</sub> :

$$t_{tabel} = t_{(\alpha/2)/(n-2)}$$

$$= t_{(0,025)/(12)}$$

$$= 2.179$$

➤ So, t<sub>count</sub> > t<sub>tabel</sub> = 3.151680551 > 2.179 ; maka Ho

ditolakartinya, terdapat pengaruh yang besar (signifikan) antara Employers, total (% of total employment) (modeled ILO estimate) terhadap laju International tourism, expenditures (current US\$) di Indonesia daritahun 2004 - 2017

## Conclusion

From the results of the study it can be concluded statistical data with Variable Predictions of Employers, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditure (current US \$). from 2004 - 2017 is as follows:

1.  $f_{hitung} > f_{tabel}$  yaitu  $886.2824822 > 3.885$ ; So,  $H_0$  was rejected. Thus, linear regression analysis can be used in predicting Employers' Variables, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditures (current US \$) from 2004 - 2017.

2. Simple Linear Regression Equations are as follows :

$$Y = 2.447596544 + 9.03792E-11X$$

3. Correlation (interrelation) between Employee Variable relationships, total (% of total employment) (modeled ILO estimate) By Analyzing the growth of International tourism, expenditures (current US \$). from the years 2004 - 2017 the results obtained 0.672964691 with the interpretation is a good correlation that ranges from 0.76 to 1.00.

4. So,  $t_{count} > t_{tabel} = 3.151680551 > 2.179$  ; then  $H_0$  is rejected

meaning, there is a large (significant) effect between Employers, total (% of total employment) (modeled ILO estimate) on the rate of International tourism, expenditures (current US \$) in Indonesia from 2004 - 2017.

## Thank-You Note

The author would like to thank the Central Statistics Indonesia for providing the data needed by the author, thanks to both parents, teachers, friends, family, and friends in completing this paper.

## References

1. Manning A (2003) Monopsony in Motion: Imperfect Competition in Labor Markets. Princeton. NJ: Princeton University Press.
2. Wachter M L (2004) Theories of the employment relationship: choosing between norms and contracts.
3. Blair M M (1996) Ownership and control: Rethinking corporate governance for the twenty-first century. Long Range Planning 29: 432-432.
4. Draper N, H Smith (1992) Analisis Regresi Terapan Edisi Kedua. Terjemahan oleh Bambang Sumantri. Gramedia Pustaka Utama, Jakarta.
5. Kutner MH, Nachtsheim CJ, Neter (2004) Applied Linear Regression Models. 4th ed. New York: McGraw-Hill Companies, Inc.
6. Akdon dan Ridwan (2013) Rumus dan Data dalam Analisis Statistika. Bandung: Alfabeta.
7. Indriantoro, nurdan Supomo, bambang (1999) Metodologi Penelitian Bisnis Untuk Akuntansi & Manajemen. Yogyakarta : Penerbit BPFE.
8. Siregar S (2012) Statistik Parametrik untuk Penelitian Kuantitatif, Cetakan Pertama, Jakarta: PT Bumi Aksara.

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