BAB I PRELIMINARY

I.1 Introduction

We as users must be able to understand knowledge in the field of information technology to keep up with current technological developments. Information technology itself has a meaning as a very supportive factor and supports humans to take advantage of the various conveniences produced by technology (Hasugian, 2018). With information technology (IT), companies can develop and use management information systems now a necessity for most businesses. The value of information technology (IT) refers to the value of IT itself. IT value is the value added because of using managed IT resources to improve company performance. This value is given as a monetary quantity which can be expressed as an index ratio. The value of IT is very important for business will be used to ascertain whether the implementation of IT in the organization has a positive impact and benefits for the business and understand the use of IT in the workplace (Saufik, 2021).

Analyzing the financial statements of the business allows for the evaluation of its financial standing. There are many analyses that may be done to determine whether the company's financial situation is sound, one of which is the analysis of linear and nonlinear regression data, followed by an examination of the Cobb Douglas production function to determine the amount of IT investment. Financial statements are among the most critical pieces of data for evaluating a company's growth they may also be used to evaluate a company's past, present, and future goals. Financial statements are often produced to give details about the state of a company's finances, operations, and cash flows during a specific period (Maith, 2013).

The alignment of business and IT goals demonstrates that information technology (IT) plays a strategic role in business processes. The ability of the organization or business to gain advantages or value from the IT investment made can be used to gauge this alignment. Improvements in corporate performance, productivity gains, cost savings, market share growth, innovative customer-focused services, and products, and improved internal business process integration are just a few of these

advantages (Becker et al., 2015). Due to the accessibility of data, financial performance is most frequently used. Furthermore, financial success is eventually utilized to gauge business performance. It's possible that determining the value of IT is not as critical as determining the variables that drive IT's contribution to the company's value creation. In addition to being a necessity for the organization, IT investment should be used to establish and sustain a competitive edge to boost productivity. IT is merely a management tool, and it cannot take the place of managerial qualities, hence it cannot automatically produce a competitive edge. For IT expenditures to give a company a competitive advantage, businesses must make sure that they support the broader business plan of the organization (Gresik & Kerja, 2005).

The Cobb Douglas production function can be used to calculate IT cost performance or investment amounts. Typically, linear regression testing must be done first before introducing the model. It is necessary to pass the traditional assumption test in linear regression. The heteroscedasticity test, multicollinearity test, normality test, and autocorrelation test are the four methods used in the traditional assumption test. There are no explicit guidelines as to which test sequence must be satisfied first; instead, the data at hand dictates this (Alkarimah, 2017). A statistical method for determining the impact of one or more variables on a single variable is called linear regression. Influence-producing factors are also known as independent, independent, or explanatory variables. The term "dependent variable" or "dependent variable" is frequently used to refer to the variable that is affected (Kusumawati et al., 2017). Regression analysis serves at least three purposes describing the data phenomenon or case being studied, performing quality control, and making predictions. By creating a mathematical model of the relationship between the variables, regression can explain data phenomena. Through the use of the developed regression model, regression may also be utilized to control (control) a case or objects that are being observed (Olive, 2017).

Production is the transformation of two or more resources (inputs) into one or more outputs (products). The result of economic activity that involves a variety of inputs is called production. With this knowledge, production activities combine

several inputs to create output. A production function describes the analysis of the impact of the input on the output. As a direct solution when compared to other production functions, the Cobb Douglas production function was chosen for this study from among the many other production functions currently in use. The Cobb Douglas production function is the one that is most frequently employed. The Cobb-Douglas function is an equation that depicts how the input and desired outcome interact (Amalia, 2014).

The measurement error of input and output, according to Brynjolsffson, is one of the issues that develop in IT productivity conflicts. Therefore, to determine the return on their IT investment, businesses must consider the capital contribution, the value of each capital contribution that affects their IT investment, the productivity and input investment in IT, as well as the value of each capital contribution. Since the formula utilized is the value of revenue and expenditure in accordance with the objective of measuring IT productivity, the Cobb Douglas (CD) production function technique can be used to test the contribution of the capital value of an investment (Alkarimah, 2017).

I.2 Problems Formulation

The formulation of the problem to be studied is as follows by considering the given background:

1. How does Information Technology Capital Expenditure affect XL Axiata company performance uses the Cobb Douglas production function?
2. What is the result of Information Technology capital expenditure at XL Axiata company using Cobb Douglas production function for the last 15 years?
3. Does the value of IT capital expenditures influence company performance?
4. How do the results of the IT investment analysis compare with XL Axiata, Telkom Indonesia, Bank Mandiri, and Bank BNI?

I.3 Research Purposes

This research was conducted to answer the questions in the problem formulation, including:

1. Knowing the effect of capital expenditure on the value of Information Technology by using the Cobb Douglas production function.
2. Knowing the results of Information Technology capital expenditures at the XL Axiata company using Cobb Douglas production functions for the last 15 years.
3. Knowing how much influence the value of IT capital expenditures has on company performance.
4. Knowing the comparison of the results of IT investment analysis between PT XL Axiata, PT Telkom Indonesia, PT Bank BNI, and PT Bank Mandiri.

I.4 Research Limitations

The limitation of this research is that it only looks at case studies conducted at PT XL Axiata. Following the company's annual report, internal and external factors can also have an impact on how much information technology is measured in this study.

I.5 Benefits of Researh

The expected benefits after doing this work are:

1. For the author, so that this work can increase knowledge regarding capital expenditures on the value of Information Technology in companies using the Cobb Douglas production function,
2. For companies, so that companies can use this work as a source of additional information regarding their financial condition from the company's capital expenditures and can find out the amount of profit by utilizing IT investments.

I.6 Writing Systems

The systematics of writing in this work are as follows:

BAB I PRELIMINARY

This section contains a background explanation research, problem formulation, research objectives, research benefits, problem boundaries, and systematics writing.

BAB II LITERATURE REVIEW

This section contains the contents of a harmonious literature study with research and used in the problems to be studied.

BAB III RESEARCH METHODOLOGY

This section contains the contents of the sequence carried out in this work in detail, including conceptual models and systematic problem solving.

BAB IV DATA PROCESSING

This section contains the contents of the analysis of the data processing process as well as the tools used in data processing. The data processing process starts from collecting data, determining the methods, formulas, and applications used to assist the data processing. So that it will give the desired result.

BAB V PROCESSING RESULTS AND COMPARISON OF DATA

This section discusses the results of data processing that has been carried out in the previous chapter for comparison in each company.

BAB VI CONCLUSIONS AND RECOMMENDATIONS

This chapter contains conclusions and suggestions from the results of the final project analysis.