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Does Enterprise Resource Planning Impact on Firm Performance?

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ABSTRACT: In the era of global competition, Enterprise Resource Planning (ERP) is system that can help company to integrating the management of all the company's resource. The purpose of this study is to measure the extent to which specific firms have implemented ERP system and, to assess the value implication of this system on firm performance. This study focus in Indonesian Manufacturing Companies. Firm performance is proxied by profitability ratio and solvency ratio. The result of this study found that ERP has a positive effect on profitability, whereas for solvency, ERP has a negative effect. It can be said that companies that implement ERP have better performance compared to companies that do not implement ERP.

KEYWORDS: *Enterprise Resource Planning, ERP Implementation, Firm Performance, Profitability, Solvency*

I. INTRODUCTION

In the current era of the global economy, increasing technological sophistication will have an impact on increasingly intense competition and the increasing number of changes in the business environment. Companies are advised to execute the full, effective and integrated management systems such as velocity, production, high-capacity, high-quality products, low cost and minimum stock holding (Acar et al., 2017).This aims to improve the company's competitive advantage by utilizing information technology. This situation encourages companies to always innovate and always improve their performance.Therefore, we need a system that can enable organizations to improve the effectiveness and efficiency of the company's operational performanceand to assist companies in storing critical data and information which it can increase the productivity of the company.

Enterprise Resource Planning (ERP) is a computer-based integrated system designed to process corporate transactions and facilitate planning of integrated and real time, production, and consumer responses into an integrated database, and transform data into useful information that supports business decisions (Hsu, 2013).The ability to access information from various parts of the organization helps companies streamline their business processes and reduce inefficiencies. As a result, ERP is expected to improve operational performance which leads to financial benefits through increased efficiency and effectiveness.

ERP systems have been implemented in several companies. ERP software that is usually used by companies is SAP and ORACLE. However, previous research revealed that only a few companies benefited from the ERP system.Some assume that the implementation of ERP implementation is very complicated and the costs required are also very large.In Indonesia, there are several cases of failure of ERP implementation, ERP which takes much longer than general practice that only takes 6 to 12 months, but many also are generally said to be successful, so the company is able to improve its performance.This ERP system failure can occur when there are integration problems, lack of funds, project scheduling mismatches, and user resistance to change (Katerattanakul et al., 2014).

Research conducted by Hsu (2013) on IT Resource (ERP) in 150 manufacturing companies in America, found that the presence of ERP in the company increased the company's business integration. This is consistent with the results of research Park and Park (2015).Park and Park (2015) examined ERP implementation and profitability.The results state that ERP implementation has an effect on profitability. This is because by implementing ERP companies can assist in managing the company's resources, so companies get huge profits. However, while the results Hsu (2013) also showed that the ERP implementation does not affect the company a competitive keuntung. Acar et al. (2017) also found that ERP did not affect the company's operational performance.

Based on the description above, this study will examine whether ERP implementation will improve the company's financial performance, specifically on the company's ability to process its assets (profitability) and the company's ability to fulfill its obligations (solvency). The company's profitability has a high influence on the value of the company. The higher the profit gained the company signifies maximum ability in managing overall assets. While solvency shows the company's ability to fulfill all its obligations. This shows an indication of the level of security of the lenders (Banks). This study uses a sample of manufacturing companies from 2012 to 2016.

II. LITERATURE REVIEW

2.1 Enterprise Resource Planning (ERP)

According to Monk and Wagner (2001), Enterprise Resource Planning system is the core software program used companies to integrate and coordinate information on each area of the business process. ERP programs help organizations to manage companies that have a scope wide business processes, using basisyang integrated and used as an effective management reporting tools to support decision making. The business process is a set of activities that begins with a particular input to produce a specific output such as a report or prediction of which has added value to customers. ERP software encourages operating efficiency of business processes by integrating interconnected tasks such as sales, accounting, and management of human resources within the company. Some ERP modules according to Romney and Steinbart (2012):

1. Financial
   The function of this module is to conduct general journals and reporting systems including general journals, accounts receivable, fixed assets, budgeting, cash management, and managerial report preparation and financial reports.
2. Human resources and payroll
   This module is for managing human resources, payroll, employee benefits, training, time and attendance, benefits, and reports for those in need.
3. Order to cash
   This module is for order entry sales, shipping, inventory, cash receipts and commission calculations.
4. Purchase to pay
   This module is related to purchasing, receiving and checking inventory, manage inventory and warehouse, and cash outlays.
5. Manufacturing (production cycle)
   This module is useful for managing production schedules, raw material bills, process items, workflow management, control, board management, and projects and manufacturing processes.
6. Project management (costing)
   This module is for managing billing, time and expenses, unit performance, and activity management.
7. Customer relationship management
   This module is related to sales and marketing, commissions, services, customer contact, and call center support.
8. System tools
   This module is a tool for creating data master files, determining information flow, access control, etc.

2.2 Firm Performance

Profitability ratio is the ratio of profit that connects with the sale of investments. This ratio shows the firm's overall operational effectiveness. The purpose of using profitability ratios for firms, as well as for parties outside the firm, is to measure and calculate the profits obtained by the firm in a given period. In this study, the profitability ratio used is Return on Assets (ROA), which is a comparison between the net income of the total assets of the entire firm (Hunton et al., 2003). The greater the ROA of a firm, the greater the level of profit achieved by the firm and the better the position of the firm in managing its resources.

Solvency ratio is a ratio that shows the amount of assets of a firm funded with debt. That is, how much the debt burden is borne by the firm compared to its assets. This ratio indicates the firm's ability to pay its liabilities. Both short and long term obligations. The solvency ratio used in this study is Debt to Asset Ratio, this ratio shows the relative value between the total debt value to total assets. The ratio is calculated by dividing the total value of debt to total assets.

III. MODEL AND HYPOTHESIS

ERP systems are important tools for planning business processes, information flow, and controlling resources from companies (finance, materials, equipment, labor) in different places. The success of ERP implementation in companies provides benefits in planning and decision making and can improve firm performance (Ince et al., 2013). Nicolaou and Bhattacharya (2006) also state that there are effects of organizational performance gains and losses as a result of the re-design of business processes caused by ERP implementation. Besides that, ERP supported by E-business will create a business value (Hsu, 2013).

Acar et al. (2017) said that there is an ERP system capability in helping and evaluating supply chain performance management. Through empirical studies, concluded that there is a need to develop a framework for procurement requests from the supply chain supply chain. The system that supports good supply chain capabilities for managing supply chain performance is Oracle. With increasing performance this will increase revenue and become a reference for companies to increase firm value. This was proven again by Hsu (2013) and Park and Park (2015) who stated that the implementation of ERP systems had a positive impact on the components of user performance.

H1a: ERP Implementation has an effect on Firm's Profitability

H1b: ERP Implementation has an effect on Firm's Profitability

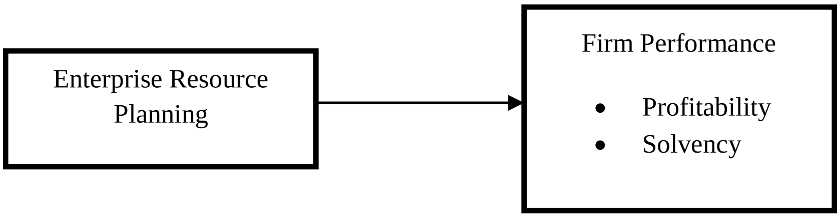

Figure-1 Proposed Research Hypothesis

IV. RESEARCH METHODOLOGY

4.1 Population and Sample

The type of data used in this study is quantitative data. Sources of data in this study are secondary data consisting of financial statements of all companies listed on the Indonesia Stock Exchange (IDX) from 2012 to 2016 and can be downloaded at www.idx.co.id and the company's website.The sampling technique using purposive sampling technique is sampling taking on the basis of the suitability of certain characteristics and criteria (Sugiyono, 2012). The criteria used in this sampling are:

1. Companies that publish annual financial reports on the company's website or the IDX website during the 2012-2016 period.
2. retrieve data related to research variables and disclose the use of information systems in annual reports.

4.2 Research Variable

Enterprise Resource Planning

The independent variable in this study is Enterprise Resource Planning (ERP). ERP was measured by a dummy variable (Hsu, 2013), which takes value "1" for companies that implement ERP and value "0" for otherwise.

Firm Performance

The dependent variable in this study is firm performance which is measured by ROA (Profitability) and DAR (Solvability). Returns on assets (ROA) are used to calculate the firm's profits in generating profits using the assets it owns.

$$\text{ROA} = \frac{Earning\ After\ Tax}{Total\ Asset}\ x\ 100\%$$

Meanwhile, Debt to Asset Ratio (DAR) is used to measure how much the firm's assets are financed by total debt.

$$\text{DAR} = \frac{Total\ Liabilities}{Total\ Asset}\ x\ 100\%$$

4.3 Data Analysis Technique

In this study hypothesis testing uses multiple linear analysis to measure the strength of the relationship between several independent variables and to show the direction of the relationship between dependent variables and independent variables. Hypothesis test was conducted using SPSS 20.

V. RESULTS

ERP Implementation affects the Profitability's Firm

The effect of ERP implementation on firm's profitability in this study is analyzed by using t test which is produced in multiple linear regression model. The result of multiple linear regression model to see the effect of ERP implementation on profitability is presented in table 1 below.

Tabel 1
Hypothesis Test Results

Dependent Variable	Coefficient	Sig.	Conclusion
ROA	0.130	0.083	Positive, Significant*

Source: data processed, 2019 (*with confidence level of 0.1)

Based on the results of multiple linear regression test in table 1 can be concluded that the implementation of ERP has a positive and significant impact on firm's profitability. It can be seen based on the significance level of count 0.083. This shows the level of significance count <confidence level (0.10). ROA regression coefficient value of 0.130, it can be concluded that ERP can improve profitability. The positive sign of the regression coefficient shows the unidirectional relationship between the ERP implementation and profitability, where if the ERP implementation increases once, profitability will increase by 0.130 times. This shows that hypothesis 1a which states the implementation of ERP has an effect on firm's profitability is proven.

ERP Implementation affects the Solvency's Firm

The effect of ERP implementation on firm profitability in this study is analyzed by using t test which is produced in multiple linear regression model. The result of multiple linear regression model to see the effect of ERP implementation on solvency is presented in table 2 below.

Tabel 2
Hypothesis Test Results

Dependent Variable	Coefficient	Sig.	Result
DAR	-0.149	0.047	Negative, Significant

Source: data processed, 2019

Based on the results of multiple linear regression test in table 2 can be concluded that the implementation of ERP has a negative and significant impact on firm's solvency. It can be seen based on the significance level of count 0.047. This shows the level of significance count <confidence level (0,05). The value of DAR regression coefficient is -0.149, it can be concluded that ERP can improve profitability. The negative sign on the regression coefficient shows the opposite relationship between ERP implementation and solvency, where if the ERP implementation has increased by one time, the solvency will decrease by 0149 times. This shows that hypothesis 1b which states the implementation of ERP has an effect on the firm's solvency is proven.

VI. DISCUSSION AND CONCLUSSION

ERP implementation provides the ability to influence financial performance. because by implementing the ERP companies are able to produce the quantity of work that is more in one period. The research result is consistent with findings Hsu (2013), Acar et al. (2017), Hunton et al. (2003), Ince et al. (2013), and Nicolaou and Bhattacharya (2006). This shows that with the ERP system in a firm can help in the process of operational controls that have been or unfinished. In addition, the work has clear standards using an ERP system, so that it can increase responsibilities related to work standards. With the significant influence over the effectiveness of the firm's ERP implementation, this will have an impact on the profitability and solvency will be acquired by the firm.

Profitability is one indicator in assessing firm performance. The increase in firm profitability illustrates that the firm has a real increase in the value of the firm, because with high productivity it signifies a good future. An increase in profitability shows the firm's ability to obtain net profits from its operational results. Likewise, with solvency, which illustrates that with the existence of an ERP system, companies can reduce uncertainty in paying their obligations. This is because ERP can provide resources well. This triggered investor to get a positive signal to the firm so that it increased the demand for shares and ended in increasing the value of the firm in the eyes of the public in general.

Regarding the results of the research, as for the limitations that still exist in this study. Future research can modify the model by adding other variables, or adding indicators for financial performance. Future studies can use primary data, which can use questionnaire data or direct interviews, so that it is expected to get clear results from this study. The sample in this study is also still limited, it is expected that further research will add the research sample.

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