

THE INFLUENCE OF ADVANCED ENTERPRISE RISK MANAGEMENT IMPLEMENTATION ANALYSIS

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ABSTRACT

The study is aimed at investigating the extent to which Enterprise Risk Management Advanced (ERMADV) implementation impacts firm performance and value. The assessment of ERMADV implementation level is done by using six components derived from governance and firm operating activities whose measurements are based on Organization for Economic Cooperation and Development (OECD) principle and COSO ERM-Integrated Framework. Return on Equity (ROE), leverage, firm size, as well as board of directors were further used in this study as control variables. This study includes companies concerning the Infrastructure, Transportation, and Logistics sectors that is registered on the Indonesia Stock Exchange website from year 2018 to 2020. The findings of this research indicate that ERMADV significantly affects firm performance and value. The result of the first model indicates the simultaneous effect on the financial performance of ROA, ERM Implementation, Leverage, Return on Equity, Board Size, as well as Firm Size. Subsequently, ERM Implementation only partially influences Return on Asset (ROA). The effect of ERM Implementation, Board Size, Firm Size, Leverage, and Return on Equity (ROE) were assessed simultaneously in order to measure Firm Value of Tobin's Q. In contrast, ERM implementation and the number of Board of Directors only partially impact Tobin's Q.

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INTRODUCTION

Enterprise Risk Management first came to light as a response to the rapid changes brought about by globalization and the regulatory requirements for companies to manage risk comprehensively (Shad et al., 2019). Moreover, due to the rise of significant scandals involving finances and the global financial crisis, Enterprise Risk Management continues to receive increasing amount of attention, especially from regulatory agencies, academics, as well as practitioners across the globe (Florio & Leoni, 2017). The Committee of Sponsoring Organizations of the Treadway Commission (COSO) (2017), in contrast, point out that enterprises will always face a volatile future. Consequently, managing Enterprise Risk Management will be a crucial step for every organization in order to remain viable and highly competitive while facing the market uncertainties. Gilbert (Bahrudin, 2016) defined risk management as a process in an organization which lowers a risk to a more appropriate level through a number of procedures, which starts with measurement, followed by the management stage and ends with monitoring. These phases are carried out in accordance with the organizational strategic goals especially related to enterprise risk management.

Therefore, it was proven that implementing Enterprise Risk Management helps a company in supporting and increasing risk awareness within every division in the organization. It is believed that by implementing Enterprise Risk Management, an organization is able to lessen negative effects on financial markets, and the direct, as well as indirect costs of financial distress and income fluctuation. In other words, an integrated Enterprise Risk Management approach improves decision-making processes as well as increase performance and business value (Florio & Leoni, 2017).

One business risk phenomenon that has had a significant impact can be seen in the Barings Bank and JP Morgan Chase case, where one of the employees is given excessive authority to trade in highly risky equities. As a result, Barings Bank failed to survive Nick Leeson's hazardous deal and ended up being sold for £1, while JP Morgan was able to endure a loss of \$5.8 billion, with the

loss that was once estimated to be \$9 billion. While this has not impacted the global economy, many of the other large organizations experienced considerable financial damages as a consequence of rifts as well as weaknesses in the company's risk management plans and their customer data protection (Callahan & Soileau, 2017).

Several previous studies published in this subsection aim at supporting empirical evidence for development in subsequent research in order to examine issues regarding the effect of Enterprise Risk Management implementation on firm performance and value. A few previous studies have been conducted abroad, including those by (Callahan & Soileau, 2017), (Florio & Leoni, 2017), (Lechner & Gatzert, 2018), as well as (Ai Ping & Muthuveloo, 2015) which shows that Enterprise Risk Management positively impacts the company performance and company value. On the contrary, a study by (González et al., 2020) came to a conclusion in which there are indications of negative associations between Enterprise Risk Management and firm performance and value. Nonetheless, research on firm value in Indonesian financial sector organizations by (Agustina & Baroroh, 2016), (Sanjaya & Linawati, 2015) revealed that Enterprise Risk Management does significantly affect the value of a company.

The adoption of Advanced Enterprise Risk Management (ERMADV) in this research would be emphasized, modernized, enriched and differentiated from previous research where ERMADV is an integrated and complex enterprise risk management framework based on the COSO ERM-Integrated Framework and Organization for Economic Cooperation and Development (OECD) principle. COSO focuses on risk measurement procedures through the Risk Assessment Procedure (RAP) which represents the frequency of risk management reporting, the level of risk management measurement from top management to the lowest level, and the methods used in risk assessment. These three components are called RAadvanced.

In addition, there is also Risk Management Governance International by the Organization of Economic Cooperation and Development (OECD) Principles of Corporate Governance which explains that effective risk measurement is not only in reducing risk, but also in the steps in managing the risk. For this reason, a direct role and integration of corporate governance is required as well as complete components in risk measurement such as the presence of a risk management director, risk committee, and the responsibilities of members of the board of directors in risk management. These three components are the integration of Enterprise Risk Management - Corporate Governance which is called CGadvanced.

This study is conducted with the purpose of exploring the degree to which Enterprise Risk Management Advanced (ERM) implementation affects company performance and firm value as assessed with Return on Assets and Tobin's Q. This study contributes on two regression models which mean that it is using Multivariate Linear Regression for the measurement of the Implementation on Enterprise Risk Management (ERM) as the independent variable and the control variable towards the dependent variable Return on Assets (ROA) and Tobin's Q in measuring financial performance along with company value.

Prior research has provided evidence of how Enterprise Risk Management (ERM) implementation affects the performance and value of an organization, where ERM is designed as a complete guide for decision making, planning, design and implementation of risk controls. At this time, the role of non-financial information in this case ERM is important for companies and is a concern for stakeholders.

THEORETICAL FRAMEWORK AND HYPOTHESES

Based on stakeholder theory in which companies and people create value and trade with each other (Parmar et al., 2010). ERM implementation in this case can be the value created by the company to be traded with other values offered by stakeholders which can be in the form of capital, reputation, loans, and others. Increased capital, reputation, and loans allow companies to improve their financial performance, namely in return on assets (ROA).

COSO (2004) declares that the fundamental reason for corporate risk management is that every business exists to add value to stakeholders. In this case, ERM creates value for companies and stakeholders by avoiding direct costs including losses, bankruptcy, or difficulty paying creditors, as well as indirect costs such as loss of reputation that can affect relationships with customers and suppliers (Pagach and Warr, 2010). ERM can also improve financial performance by enhancing the spread of capital and decreasing operating losses, as well as by enhancing the ability to spot opportunities (COSO, 2004). This indicates that ERM implementation can not only reduce the negative consequences of risk, as well as discover opportunities and improve the operational and strategic decision making process of an organization. In this situation, then organizations with good Enterprise Risk Management implementation should experience higher returns on capital and accounting performance, namely an increase in Return On Assets (Florio and Leoni, 2017; Callahan and Soileau, 2017; Baxter et al., 2013). The existence of a good ERM implementation will have a positive impact on ROA performance.

H1: The implementation of Advanced Enterprise Risk Management has a significant effect on company performance

Based on signaling theory, management's decisions about providing guidance for the investors are related to how it regards the company's future opportunities (Brigham and Houston, 2009). ERM implementation information disclosed will be a signal by the company that investors and stakeholders will respond to through fluctuations in the value of its shares relative to other companies as evaluated by Tobin's Q. The company's disclosure of its ERM implementation in the annual report is one of the ways it communicates with stakeholders about their risk profile and how the company manages these risks. Enterprise Risk Management is also crucial for sustaining a company's stability (Devi et al., 2017). In addition to improving the performance of the organization through ROA, the incorporation of Enterprise Risk Management can enhance firm value in the capital market. Baxter et al. (2013) in their research found that businesses with an excellent Enterprise Risk Management quality showed higher market valuation results as well. There is a time lag between the realization of the benefits of ERM to the company, making Tobin's Q an appropriate measurement to reflect future expectations of investors by looking at the market response of (Hoyt et al., 2011).

ERM in this case benefits the company by lessening the earnings volatility and stock prices (Beasley et al., 2008). Enterprise Risk Management prevents the accumulation of inherent risk from many different directions, hence reducing volatility. Furthermore, the ERM program emerged because of increased information about the company's risk profile. Outsiders who tend to experience difficulties when making assessments, it becomes easier to assess the financial strength and risk profile of the corporations financially and operationally with the ERM information in the annual report. Disclosure of ERM implementation is also a signal of the company's commitment to managing its risks. With increased disclosure of risk management, ERM tends to lower the anticipated costs that will arise from regulatory oversight and external capital (Meulbroek, 2002).

Taking into account the increase in operating performance, as well as the announcement of a new risk management agency and implementation in the annual report of the company, this can positively influence investor perceptions which is predicted to have a positive association between the implementation of Enterprise Risk Management and market valuation (Florio & Leoni, 2017). The existence of a good implementation of Enterprise Risk Management will bring a significant influence for the capital market assessment as determined by Tobin's Q. The following hypotheses are suggested in accordance with the theoretical basis and supporting explanations from previous study statements:

H2: The implementation of Advanced Enterprise Risk Management has a significant effect on increasing firm value.

RESEARCH METHODS

This research uses a quantitative approach through causative type research to examine the influence that a variable has on another. With this method, the researcher can make the data that has been collected to further test the truth of the hypothesis that has been formulated. This research used secondary data type which are corporations registered on Indonesia Stock Exchange (IDX). The data is accessed through the Indonesian Stock Exchange Website, as well as the company's own website. This research was obtained through the method of documentation by collecting, recording, and reviewing annual reports, financial statements, scientific journals, books, and published information.

Population and Sample

The population chosen for this study is corporations in the Infrastructure, Transportation, and Logistics Sector registered on Indonesian Stock Exchange from year 2018 until 2020. These sectors are chosen as Infrastructure Section is a key driver of economic growth. Similarly, Indonesia's Transportation and Logistics sector is critical for evaluating the extent of competitive advantage of an economy associated with the accessibility of sufficient and efficient facilities and infrastructure, to the point where it exhibits high competitiveness within the transportation sector. This will decide how quickly Indonesia's economy expands and its ability to survive in an increasingly relentless global competition. Additionally, these two industries frequently utilize enormous amounts of capitals, making it impossible to finance with the sector's own capital. Financial risks, including loan interest rate volatility, receivables risks, currency rate changes, and an increase in financial costs are increased as a result of this. Not only are these two industries subject to financial risk, but they also constantly have to deal with operational and maintenance risk, compliance and legal risk, the risk of losing human resources, and risk of raw material supply.

Purposive sampling technique was the method of selection which was applied for this research. The purposive sampling technique uses several criteria used in this study as follows:

1. Has been listed on the IDX throughout 2018-2020
2. Has published an annual report and a complete financial report that has been audited throughout the year.
3. The company only uses Rupiah as reporting currency in its annual reports and financial statements.
4. The annual reports and financial reports published by the company provide complete information regarding the variables in the study.

Table 1
Stages of Sample Selection With Criteria

No	Criteria	Total
1	Indonesian Infrastructure, Transportation and Logistics Sector Companies	86
2	Total companies that are registered on Indonesia Stock Exchange for year 2018-2020	(16)
3	The companies do not publish annual report and complete financial statements for 2018-2020	(10)
4	The companies do not use Rupiah as reporting currency	(8)
5	Total company as sample	52
6	Total data during the research period (2018-2020)	156
7	Elimination of research outlier data	(21)
8	The total number of research samples that are acceptable for hypothesis testing	135

Source: Data processed in 2022

RESEARCH VARIABLE

Dependent Variable

In this study, return on assets (ROA) and Tobin's Q are used as the dependent variables which represents company performance and company value. ROA and Tobin's Q are used to evaluate the organization and the capital market response, respectively. (Callahan & Soileau, 2017). The formula used to measure these two variables are as follows:

$$ROA = \frac{\text{Operating Income}}{\text{Total Assets}}$$

$$Q = \frac{(\text{Market Capitalization} + \text{Book Value of Liabilities})}{\text{Book Value of Total Assets}}$$

Independent Variable

1. Chief Risk Officer (CRO)
This variable acts as a dummy variable = 1 if the company appoints or currently employs risk management director / Chief Risk Officer who is the leader and person in charge of the company's strategy in dealing with risk, and = 0 otherwise.
2. Risk Committee (RC)
The next variable acts as a dummy variable = 1 if the company appoints or currently employs a specific agency Risk Committee / Risk Committee in its task of identifying and mitigating company risks, and = 0 otherwise.
3. Risk Committees reporting to the Board of Directors (RCTOBOD)
The third variable acts as a dummy variable = 1 if the company is responsible for managing the overall risk of the board of directors or the Risk Committee reports its performance to all members of the risk board / concurrent membership of the board and ICR / Internal Control Committee, and = 0 otherwise.
4. Frequency of risk assessment (RAFREQ)
This first variable acts as a dummy variable = 1 if the company conducts risk measurement procedures and or risk reporting at least 2 times in a year, and = 0 otherwise.
5. Level of risk assessment (RALEVEL)
The next variable acts as a dummy variable = 1 if the company measures the company's risk level continuously towards the lowest level, starting from the planning process, work implementation to project monitoring, and = 0 otherwise.
6. Risk assessment method (RAMETHOD)
The last variable acts as a dummy variable = 1 if the company in measuring its risk explains what risks it faces and their prevention mitigations carried out through qualitative and quantitative methods, and = 0 otherwise

Control Variable

This study only takes 2 sets of control variables, the first of which is represented by BODSIZE to see the control of the Board of Directors members and company Size which measures the assets of the company at the completion of the financial year as control variables in both measurement models of Return On Assets and Tobin's Q. Leverage and ROE is the second set used in this study. Leverage and ROE are chosen as additional control variables because the view of investors in investing generally looks at the level of debt of a company and the return on capital from the funds that have been invested (Vinet & Zhedanov, 2011). Furthermore, ROE appears to be strongly associated to market performance / firm value, while leverage might be a control for the ambiguous association of capital structure and market evaluation (Florio & Leoni, 2017).

RESEARCH MODELS

For this research, four control variables are utilized in the initial model related to firm performance in terms of financial performance represented by Return on Asset (ROA), consisting of the number of Board of Directors / BODSIZE, Size of the Company, Leverage, also Return on Equity. The second model in this study evaluates the performance of companies from the prospective of the investors, or commonly labeled as firm value. The measure of firm value is represented through the variables of Tobin's Q along with two categories of control variables consisting of BODSIZE, Company Size, Leverage, and Return on Equity, as in the first model. Multiple linear regression used to examine how the ERMADV had an impact on the firm performance and value by using SPSS 2020. Regression model in this study is constructed as described below:

Regression Model 1

$$ROA_{it} = \alpha + \beta_1 ERMADV_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 BODSIZE_{it} + \beta_5 SIZE_{it} + \varepsilon$$

Regression Model 2

$$Q_{it} = \alpha + \beta_1 ERMADV_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 BODSIZE_{it} + \beta_5 SIZE_{it} + \varepsilon$$

Information:

ROA	: Ratio of return on assets
Q	: Tobin's Q Ratio
ERMADV	: ERM implementation dummy variable
LEVERAGE	: Leverage Ratio
ROE	: Return on equity
BODSIZE	: Board of Directors size
SIZE	: Company size

RESULTS AND DISCUSSION

Descriptive Statistic

Based on descriptive statistical analysis test results above, it shows the descriptive statistics of variables used in the study with a total of 135 company data from annual reports and financial reports during 2018-2020 period as follows:

1. Return on Assets in the 2018-2020 period has a minimum value of -0.46, the maximum value is 0.25 and the average value is 0.01 with a standard deviation of 0.09901.
2. Tobin's Q has a minimum value of 0.26, the maximum value is 6.91, the average value is 1.53 with the standard deviation value of 1.03525.
3. Leverage is used as a control to see its effect on investors' perceptions of investing. In this case, Leverage has a minimum value of -4.55, the maximum value is 11.93 the average value is 1.26 with the standard deviation value of 1.86294.
4. ROE is used to test whether it can be a control in the application of risk management to increase firm value. Return on Equity has a minimum value of -0.78, the maximum value is 1.43, the average value is 0.06 with a standard deviation value of 0.26578.
5. Members of directors are used as controls in the formation of the risk management component which affect the increasing the effectiveness and efficiency of financial performance and its effect on value. Board of Directors Size has a minimum value of 2, the maximum value is 9, the average value is 3.63 with the standard deviation value of 1.52614.
6. Firm Size is used as a control to see whether the size of the company's assets at the end of the financial year will affect the financial performance and value of the company. Firm Size has a minimum value of 24.57, the maximum value is 33.14, the average value is 28.34 with a standard deviation value of 2.15466.

Table 2
Descriptive Statistical Analysis Test Result

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	135	-0,46	0,25	0,01	0,09901
Q	135	0,26	6,91	1,53	1,03525
Leverage	135	-4,55	11,93	1,26	1,86294
ROE	135	-0,78	1,43	0,06	0,26578
BODSIZE	135	2	9	3,63	1,52614
SIZE	135	24,57	33,14	28,34	2,15466

Source: Data processed in 2022

Independent Variables Data Distribution

The distribution of data from the independent variables is specifically presented separately in Table 3 to see the distribution of the sample of ERM implementation in infrastructure, transportation and logistics sector companies in Indonesia for the 2018-2020 period.

Table 3
Distribution of Dummy ERM Variable Components

Component	Code	Frequency			%		
		2018	2019	2020	2018	2019	2020
CRO	1	12	13	13	26,67	28,89	28,89
	0	40	39	39	88,89	86,67	86,67
RC	1	16	16	17	35,56	35,56	37,78
	0	36	36	35	80,00	80,00	77,78
RCTOBOD	1	44	43	44	97,78	95,56	97,78
	0	8	9	8	17,78	20,00	17,78
RAFREQUENCY	1	38	37	39	84,44	82,22	86,67
	0	14	15	13	31,11	33,33	28,89
RALEVEL	1	41	42	43	91,11	93,33	95,56
	0	11	10	9	24,44	22,22	20,00
RAMETHOD	1	35	39	40	77,78	86,67	88,89
	0	17	13	12	37,78	28,89	26,67
TOTAL	1	118			75,64%		
	0	38			24,36%		

Source: Data processed in 2022

The ERM implementation variables, code 1 represents a company that has met at least four of the six components of ERM implementation and code 0 is otherwise. Data acquisition shows that 118 samples are coded 1 and 38 samples are coded 0. This indicates that 118 samples meet the integrated risk management criteria and the remaining 38 samples do not meet these criteria. The results of data collection suggested that Indonesian enterprises in the infrastructure, transportation, and logistics sectors are starting to implement integrated Enterprise Risk Management at a rate that is approaching the maximum value of 75%.

Classic Assumption Test Results

The test is conducted two times separately with different dependent variables, namely Return on Asset and Tobin's Q, resulting in a asymptotic significant (2-tailed) value of 0.872, and 0.130 respectively. All the values are proven to be higher than 0.05 or 5%, meaning that the data has been normally distributed and that the data can proceed to the hypothesis testing. In addition, the results of Multicollinearity Test show that all the VIF value higher than 0.10 or 0.1%, Thus, it can be

concluded that there is no multicollinearity issues between variables for these two model. Moreover, the heteroscedasticity test show the significance value are above 0.05 or 5%, indicating that the regression model utilized in this study does not have heteroscedasticity.

Table 3
Classic Assumption Test Results

Normality Test (One-Sample Kolmogorov-Smirnov Test)					
	Asymp. Sig. (2-tailed)				
ROA	,872 ^c				
TOBINS'Q	,130 ^c				
Multicollinearity Test (Variance Inflation Factor (VIF) Value)					
DEPENDENT	ERMADV	DER	ROE	BODSIZE	FIRMSIZE
ROA	1,175	1,661	1,452	1,185	1,203
TOBINS'Q	1,175	1,661	1,452	1,185	1,203
Heteroscedasticity Test (Breusch-Pagan Test)					
DEPENDENT	ERMADV	DER	ROE	BODSIZE	FIRMSIZE
ROA	,080	,657	,442	,461	,683
TOBINS'Q	,052	,468	,058	,062	,504

Source: Data processed in 2022

Hypothesis Test

The test in this study uses Multivariate Linear Regression analysis where testing is carried out on several independent variables and their control variables towards two dependent variables. Regression testing is carried out in stages starting from the dependent variable ROA model related to the measurement of company performance followed by the dependent Q / Tobin's Q related to the measurement of Company Value will be briefly presented in the following table 4.

$$ROA_{it} = \alpha + \beta_1 ERMADV_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 BODSIZE_{it} + \beta_5 SIZE_{it} \varepsilon$$

$$Q_{it} = \alpha + \beta_1 ERMADV_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROE_{it} + \beta_4 BODSIZE_{it} + \beta_5 SIZE_{it} + \varepsilon$$

Table 4
Result Testing Summary

	ROA		Tobin's Q	
	Sig	Desc	Sig	Desc
ERMADV	0,015	Significant	0,007	Significant
LEV	0,914	Not Significant	0,692	Not Significant
ROE	0,061	Not Significant	0,222	Not Significant
BODSIZE	0,325	Not Significant	0,013	Significant
Firm Size	0,246	Not Significant	0,978	Not Significant
N	135 Sample		135 Sample	
F	0,004	Significant	0,008	Significant
Adjus-ted R	8.9%		7,90%	

Source: Data processed in 2022

$$Y1 = -0,194 + 0,052 X1 + 0,001 X2 + 0,070 X3 + 0,006 X4 + 0,005 X5$$

$$Y2 = 2,458 - 0,606 X1 + 0,023 X2 + 0,478 X3 - 0,152 X4 + 0,001 X5$$

According to the results of the research that has been conducted concerning the two regression models in order to measure both Financial Performance and Firm Value, the two models produce consistent results. In the first model, the dependent variable ROA (Y1), the independent variable ERMADV Implementation (X1), and the control variable Leverage (X2), ROE (X3), BODSIZE (X4), and Firm Size (X5) are used to measure financial performance.

In individual or partial testing, each independent variable's significance value is above 0.05, but for ERMADV implementation the significant value is below 0.05, it was 0.015. It can conclude that individually all control variables have no effect on the dependent variable, except the independent variable, the implementation of ERMADV which has a significant influence on the measurement of financial performance First Regression Model. The findings of the overall test suggest that a significant effect is present on the financial performance in both partial and simultaneous testing. The aforementioned is apparent in the value of F_{count} which is below its significance value ($0.004 < 0.05$), leading to the conclusion that the First Regression Model in measuring Financial Performance simultaneously has a significant effect.

The measurement of company value in the second regression model gives varying test results. Simultaneously, Tobin's Q (Y2) is significantly influenced by the independent variable ERMADV implementation (X1), as well as the control variables Leverage (X4), ROE (X5), BODSIZE (X2), Firm Size (X3). This can be seen from the value of F_{count} which is below the value of ($0.008 < 0.05$). Meanwhile, individual or partial testing of the independent variable testing ERM implementation on Y2 Tobin's Q provide significant results, it can be seen at significance which is below the value of ($0.007 < 0.05$) but the results were indicate negative sign. T_{count} value was -2.732 and the Standardized Coefficient Beta value -0.606. while the control variable BODSIZE (X4) significantly influences Y2 or Tobin's Q ($BODSIZE = 0.007 < 0.05$), and the other 3 control variables does not significantly impact Firm Value measured by Tobin's Q ($Leverage = 0.692 > 0.05$), ($ROE = 0.222 > 0.05$) & ($Firm Size = 0.978 > 0.05$).

The Effect of Advanced Enterprise Risk Management Implementation on Company Performance

According to testing conducted using the first model on the company's financial performance, ERMADV implementation is significantly impacting ROA. The findings are consistent with studies by (Callahan & Soileau, 2017) and (Florio & Leoni, 2017), concerning the significant positive impact of the implementation of ERM on firm performance projected through ROA. The findings of this research suggested that the application of risk management is considered to be significantly affecting ROA, as Return on Asset is a ratio that measures the rate of return of all existing assets of a business, or a ratio that measures the effectiveness of the funds utilized in an organization. The ability of the organization to effectively utilize assets to generate profits increases as ROA increases. Thus, companies that have implemented ERMADV will increase the company's ROA. This result also gives meaning to the conclusion that Enterprise Risk Management Advanced implementation has an influence on firm performance which is proxied through ROA.

The findings of this research are consistent with "Stakeholder Theory" suggested by (Parmar et al., 2010) where companies and people create value and trade it. In this case, companies that implement ERMADV are able to reduce operational losses, recognize opportunities, and reduce the negative consequences of risks which ultimately create value for stakeholders, namely increasing ROA. Whereas, from the company's perspective, this finding can be concluded as the achievement of the company for preventing financial damages and sustaining its reputation.

The Effect of Advanced Enterprise Risk Management Implementation on Firm Value

In testing the second model on company value, ERMADV implementation shows a significant influence on Tobin's Q. These results support the research of (Florio & Leoni, 2017). This implies that the implementing integrated risk management significantly impact the company's performance. The result proves that the implementation of Enterprise Risk Management Advanced in impacting the company's firm value, as measured using Tobin's Q. These findings support the signaling theory (Vinet & Zhedanov, 2011) where it was stated that companies attempted to provide guidance to investors on how management regards their organization's future prospects. This can be seen in the disclosure of ERMADV implementation contained in the annual report which shows the form of the commitment as well as management of the company towards risk management, where this signal is responded to by the market positively. The findings of the research are in accordance with several prior studies conducted by (Lechner & Gatzert, 2018) and (Agustina & Baroroh, 2016) regarding the significant effect of ERMADV implementation on company value which in this research was evaluated through Tobin's Q.

CONCLUSION AND LIMITATION

This research was conducted with the purpose of obtaining empirical evidence on the effect of the implementation of Enterprise Risk Management Advanced on corporate performance and value measured by Return on Assets (ROA) and Tobin's Q has a significant value on Enterprise Risk Management Advanced. This study utilized Infrastructure, Transportation, and Logistic sector corporations that are registered on Indonesian Stock Exchange as samples. Data were collected from 2018 to 2020 through the purposive sampling method. Based on the hypothesis testing performed, the following conclusions can be drawn about the research findings:

1. The financial performance test, which is measured by Return on Assets (ROA) as the dependent variable, confirms the notion that implementation of the independent variable Enterprise Risk Management Advanced and Return on Equity (ROE) as a control variable have an impact on corporate performance, in which Enterprise Risk Management advanced showcases a significant positive influence, while Return on Equity has an insignificant effect. On the contrary, Leverage, BODSIZE and Firm Size as other control variables does not affect firm performance. The financial performance measurement model indicates significant outcomes across all independent and control variables on the dependent variable.
2. The findings obtained from this research demonstrate a significant positive association between Enterprise Risk Management Advanced implementation and Return on Assets (ROA), which supports the stakeholder theory. An increase in Return on Assets (ROA) indicates that a company is successfully managing risks, in this case, reducing operational losses, which will ultimately become informative for stakeholders. For the company, on the other hand, this finding can be understood as a success in avoiding financial damages and preserving the reputation of the company.
3. Through testing the firm value by the dependent variable Tobin's Q, the independent variable Enterprise Risk Management Advanced implementation and the control variable Board of Directors Size shows significant effects on company's value. Other three control variables, which consist of leverage, Return on Equity (ROE), however, do not affect firm value. The firm value measurement model simultaneously provides significant results across all independent and control variables on the dependent variable.

The findings of this research support signaling theory by demonstrating a significant association between Enterprise Risk Management Advanced implementations and Tobin's Q. Enterprise Risk Management implementations which are disclosed by companies in their annual reports acted as a corporate signal to stakeholders, ultimately affecting the capital markets by an increase in the measurement of Tobin Q's.

This research has the following limitations which might influence the research findings:

1. The time period of the research was presently narrow. Consequently, it is unable to show the effects of Enterprise Risk Management Advanced implementation over a longer periods.
2. The limitation of the dummy variable, which is the inability to include companies that has been implementing Enterprise Risk Management Advanced on a low value. Hence, there are a possibility of using other kinds of measurement for this, as well as differentiate between the different levels of Enterprise Risk Management implementation value.
3. This study is conducted according to the information provided by the organization on its annual report. In general, it was expected for companies with a more advanced Enterprise Risk Management Advanced system to provide signals and information on their condition to the market, although annual report disclosures might sometimes be incomplete and undecided.

For the future research, the authors suggest the following improvements:

1. Extending the study's timeframe, population, and sample coverage in order to present a different perspective on how enterprise risk management affects the industries on the Indonesia Stock Exchange.
2. Including additional variables outside the scope of the study, including internal environment, risk response, economic risk, technological risk, economic risk, and others which supports the impact of enterprise risk management on company performance and company value.
3. As a part of ERMADV implementation evaluation, a more specific measurement of of the chief risk officer and risk committees' characteristics should be made. For instance, the measurement could consider the performance and activities these people do that might affect the firm performance and firm value. Meanwhile, this research is limited to emphasizing just the presence of these points within an organization.

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