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THE MATURITY LEVEL OF ENTERPRISE RISK MANAGEMENT IMPLEMENTATION IN MEDIUM-SIZED PRIORITY SECTOR COMPANIES IN EAST JAVA

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ABSTRACT

This study aims to measure the maturity level of Enterprise Risk Management in medium-sized priority sector companies in East Java. Studies on the application of ERM were previously focused more on big companies and tended to be carried out abroad and still gave inconsistent results. In addition, the number of studies on previous ERM that addressed the practice of its application on companies has not been that many. There are several studies on ERM conducted in Indonesia, however, the research objective focuses on the financial services industry referring to large companies listed on the Indonesia Stock Exchange. Although several studies have yielded significant results for application in medium-sized companies, they are only centered on construction services companies. There are 16 indicators used to measure the maturity level of ERM implementation in this study that have been adjusted to the characteristics of medium-sized industrial companies in Indonesia. The results of this study indicate that all medium-sized industrial companies in East Java have implemented integrated risk management (ERM) and have reached the optimal maturity level in implementing ERM. The results of the study also found that the automotive and electronics industry sectors are 2 industrial sectors that have the highest level of maturity in implementing ERM. Meanwhile, the lowest maturity level occurred in the food and beverage industry sector.

Keywords: East Java, ERM Maturity Level, Medium Size Industry, Priority Sector Companies.

INTRODUCTION

In supporting the application of technology 4.0, the government sets priority sectors (food and beverage industry, chemical, textile, and clothing, automotive, electronics, pharmaceuticals, and medical devices) based n the Strategic Plan of the Ministry of Industry (RPJMN 2020-2024). The determination of priority sectors is based on the consideration that priority sectors provide the greatest added value in 2017 – 2019 (Central Statistics Agency 2019), absorb the largest proportion of Indonesia's workforce from 2018 – 2020 (Central Statistics Agency, 2020), make the largest contribution to Indonesia's GDP in 2019 – 2021 (Central Statistics Agency, 2021), and contribute more than 60 percent to the national GDP which is expected to support Indonesia in becoming one of the top 10 countries with the strongest economy in the world by 2030 (Ministry of Industry, 2021). Industry in East Java has a contribution of 30.6% to the Regional Domestic Product Bruto (GRDP) of East Java. East Java's GRDP contributes 14.57% to the national GDP. In 2021, industries in East Java absorbed 3.2 million workers (Kadisperindag, 2021). The industrial structure in East Java consists of 795,797 small industries, 23,128 medium industries, and 1,231 large industries. The growth of the Medium Industry (IM) is the highest compared to other industries (Ministry of Industry: National Industrial Policy, 2020). The industrial sector is one of the riskiest businesses and usually involves complex and diverse risks (Zhao, et al., 2013). A survey conducted by (the Central Statistics Agency, 2020) of medium and large enterprises - MLEs (businesses with a turnover value of more than 2.5 billion Rupiahs and a workforce of more than 20 people) found that only 5 out of 10 MLEs operated normally during the pandemic, 82.29% of MLEs experienced a decrease in income. The risks faced are that 80% of MLE companies experienced a decrease in demand, 60% of MLE companies couldn't operate normally because business partners were affected by the pandemic, and around 53.17% of MLEs experienced financial constraints related to employees and operations. Risk management in industrial enterprises includes not only project risks but also risks encountered

by a business enterprise (Schaufelberger, 2009). In recent years, there has been a paradigm shift in the way companies view risk management and the trend has begun to move towards a holistic view of risk management. The risk management framework approach is becoming more integrated and is known as Enterprise Risk Management (ERM).

Enterprise Risk Management is one approach that goes far beyond the siloed approach (Gordon, et al., 2009). This approach is a holistic approach in identifying possible company risks and determining appropriate responses in accordance with the company's risk appetite (Zhao, et al., 2013). Enterprise means integrating or combining all types of risks, using integrated tools and techniques to mitigate risks and to communicate across lines of business or levels within the company. According to the Committee of Sponsoring Organization of the Treadway Commission COSO (2004), ERM is the process of determining the overall organizational strategy that is influenced by management, the board of directors, and other personnel and aims to identify events that have the potential to affect the organizations and manage risks to achieve the organizational goals. The application of ERM in companies consists of four types, which are strategic ERM related to strategic decision making; operational ERM related to capital, employee performance, and raw material resources; ERM hazards to overcome the risk of decreased capital, legal; and financial ERM related to bankruptcy and loss of funds. ERM implementation helps management make informed decisions (risks and opportunities) so that company goals can be achieved by creating, adding, and or protecting company values (Kurniawati, 2017). Research conducted by Hoyt & Liedenberg, (2011) that examined ERM shows that organizations with measurable risks are easier to make informed business decisions. External parties who easily obtain financial information, assume that the ERM becomes a good signal about the risk profile and risk management so that it tends to increase the value of the company. External parties who easily obtain financial information, assume that ERM is a good signal about the risk profile and risk management so that it tends to increase the company value. There are at least two important points that need attention regarding ERM. The first point is the main role of the ERM itself which integrates and coordinates all types of risks throughout the organization. That is, risks cannot be managed with a silo approach. All risks occurring within the entity must be combined and managed in an enterprise approach. The second point is that by implementing ERM, users can identify potential incidents that could affect the organization and know the risk appetite of the company. If risk appetite is specifically known, any decisions made by organizations to control risk may be parallel to the company's goals (Walker et al., 2003).

The implementation of ERM is very important in the company's operational activities. According to Ahmad Suhaimi (2020) the implementation of ERM within the company can provide benefits as a benchmark in decision-making to provide direction for companies to consider short-term and long-term influences; encourage managers to decide to avoid financial losses; allows the company to have a minimum risk of loss. The implementation of ERM contributes to the achievement of goals, improvement of performance, and quality of work. It is important to conduct a survey measuring the maturity of ERM implementation before implementing ERM to determine the current state of risk management and gaps so that ERM implementation is more targeted (Misbah, 2017). ERM implementation also serves to achieve effective strategies, effective processes and projects, and effective operations (Hopkin, 2010 p.5). In addition, ERM also has a strategic objective, which is to contribute to achieving company goals by creating, adding, and or protecting company values (Misbah, 2017). ERM has benefits for improving organizational effectiveness, risk reporting, improving business performance (Lam, 2014 p.51- 56). Using 16 groups of criteria for measuring the maturity level of ERM implementation from Zhao et.al., (2013) and adjusting using the Misbah research (2017), this study aims to measure the maturity level of ERM application that has been carried out by priority scale medium industrial companies in East Java. Sixteen ERM maturity criteria developed by Zhao et al. (2013) were used to measure ERM implementation in Chinese construction companies and correct weak areas. Previous research indicates that the implementation of ERM can improve profitability, improve the quality of decision-making, competitive advantage, and company performance (Zhao et al., 2013). The research of Zhao et al. (2013) was then adopted by Misbah (2017) which discussed the assessment of the maturity of risk management of small and medium-sized contracting companies. The similarity is that these two studies used the same sixteen criteria and categorized the level of risk maturity into five levels, namely very weak, weak, medium,

good, and optimal. The difference is that the object of research of Misbah (2017) is a small and medium-sized company in Indonesia. The results of the research of Misbah (2017) show that the maturity score of medium-sized companies is at the middle level. The ERM implementation maturity measurement model in this study adapts the model used by Zhao, et al. (2013). Researchers' considerations using the reference Zhao et al., 2013 are due to the following reasons:

1. This research focuses on the implementation of ERM even though it is applied to construction companies.
2. Comprehensively covers the ISO 31000:2009 ERM framework which is a risk management standard applied in Indonesia and internationally.
3. The criteria on the research instrument have been validated through interviews of professional experts in the field of risk management so that they can be utilized to be applied in small and medium-sized companies in Indonesia.

LITERATURE REVIEW

Enterprise Risk Management (ERM)

To anticipate risks, companies need to implement a risk management framework and create risk management standards. Risk management is the process of reducing risk, identifying, measuring, and monitoring risks in line with strategic objectives (Gilbert, 2007). The risk management process includes risk management planning, risk identification, quantitative risk analysis, qualitative risk analysis, risk response planning, and risk control and supervision (Lokobal et al., 2014). Risk management is important because it can improve the company's image in the view of stakeholders, improve ease of communication, improve appropriate decision-making increase efficiency, and can provide assurance that risks have been identified and handled appropriately, risk management also provides accurate and detailed information (Hopkin, 2010 p.47- 48). One of the risk management frameworks is Enterprise Risk Management (ERM). Enterprise Risk Management is the process of determining the overall organizational strategy that is influenced by management, the board of directors, and other personnel and aims to identify events that have the potential to affect the organization and manage risks to achieve organizational goals (COSO, 2004). ERM is a comprehensive, integrated framework for managing risk to achieve business objectives, minimize fluctuations in retained earnings, and maximize company value (Lam, 2014 p.51). Enterprise means integrating or combining all types of risks, using integrated tools and techniques to mitigate risks and to communicate across lines of business or levels within the company. Integration refers to the combination of modifying the company's operations, adjusting the capital structure, and using targeted financial instruments (Meulbroek, 2002).

According to COSO (2017), the benefits of implementing ERM are as follows:

1. Increase opportunities by evaluating positive and negative aspects so that management can identify opportunities and challenges.
2. Identify and manage risks from all entities incorporated in the organization to result in continuous performance improvement.
3. Improve positive results and take profits by reducing unexpected losses by improving the ability to identify risks and determine risk responses.
4. Reduction of performance deviations that signal performance results as expected. ERM can maximize opportunities and minimize losses.
5. Improved resource ingestion by gathering valid information to access resource needs, and sorting resource allocation deployments.
6. Companies are able to adapt to changes and business complexity.

ERM Maturity Models

Measuring the maturity level of ERM implementation is important because it can help companies to assess the company condition, strengths, and weaknesses in the application of ERM (Zhao et al., 2013). Tools for ERM maturity level measurement are ERMMs (ERM Maturity Models). The tool for measuring the maturity level of ERM, namely ERMMs, used by (Zhao et al., 2013) uses sixteen

indicators adopting fuzzy theory to avoid bias, subjectiveness, and improper judgment, which is strongly tied to the assessment of ERM maturity. This ERMMs model is quantitative so it can measure individual linguistic aspects or group decision-making. Linguistic measurements use 5 criteria which include very low, low, medium, high, and very high. From the results of the research of Zhao et al., (2013) it was obtained that this ERM criterion has been proven to be realizable and can describe the degree of maturity of ERM implementation. Research by Zhao et al., (2013) measured ERM implementation rates based on sixteen criteria with respondents from construction companies in China using a fuzzy model. This study used a survey method conducted by 89 professionals, with a total of 66 indicators seen from best company practices, which are then summarized into sixteen. The determination of best corporate practice indicators is based on sixteen kinds of literature and a selection is carried out to select the appropriate literature to apply each criterion. The purpose of this study is to identify ERM best practices applicable in Chinese construction companies (CCF), analyze important criteria for ERM programs, and develop a specific ERM model to assess ERM maturity. From the results of research by Zhao et al. (2013) based on a scale of 1-5, the ERM implementation rate was obtained with a range of 3.02 to 4.21. This indicates that the maturity level of ERM implementation in CCF companies ranges from medium to high. Of the 16 criteria, 11 were significant in the ERM implementation, and five were insignificant. Overall, from the results of the study, it was obtained that 16 indicators of the ERM implementation rate were reliable with Cronbach's alpha coefficient of 0.920 and were significant to the ERM maturity program. Adopting the results of the research of Zhao et al., (2013), Misbah (2017) conducted the same research but aimed at small and medium-scale construction companies in Pinrang Regency. The results of the Misbah (2017) research were then applied in Indonesia based on the ISO 31000: 2009 ERM framework which is a risk management standard. The level of ERM implementation is categorized into five levels, namely weak, very weak, medium, good, and optimal. This research will be based on the research area so as not to be biased in answering the questionnaire questions. The sixteen criteria, along with the practice indicators designed by Zhao et al., (2013), were then adjusted in the Misbah research presented in Table 1.

One of the company's efforts to minimize risk is by implementing risk management. The framework of risk management is ERM. ERM is important for managing and minimizing risks to achieve company goals (Sirait & Susanty, 2016). Companies that have implemented ERM will be able to make resource allocation effective, increase efficiency, capacity, and return on capital thereby improving performance (Gordon et al., 2009). The component of management commitment becomes an internal factor of the company that supports good organizational governance so that it leads to improved performance. Risk identification allows management to be able to consider the benefits and costs to improve the quality of decision-making. The right management decisions are expected to improve operational efficiency so that management's ability to generate profits also increases. Setting company goals that are adjusted to risk appetite so that the right strategy can be formulated. The benchmark for the company's success in carrying out its business activities is seen in the company's performance in making profits. The identification, assessment, response, and control of risks integrated throughout the business process make performance achievement effective. While information and communication provide relevant information making a clear accountability system. Supervision of the ERM process as a continuous evaluation allows the company to maintain and improve positive performance in the future. So, it can be concluded that companies that have implemented ERM indicate that the company can anticipate risks to make resource allocation effective, increase efficiency, capacity, and return on capital.

Some of the assumptions underlying the literature used in this study including:

1. The introduction and development of ERM systems can reduce direct and indirect costs of financial difficulties and income variability, as well as the negative influence of financial markets (Florio & Leoni, 2017).
2. ERM implementation is a risk management portfolio and increases efficiency due to the coordination of various business lines and creating pure protection throughout the company (Hoyt & Liedenberg, 2011).
3. The implementation of ERM allows adequate monitoring and management of the company's entire risk portfolio and enables the company to achieve long-term competitive advantages taking

into account the benefits and costs (Meulbroek, 2002) (Hoyt & Liedenberg, 2011; Nocco & Stulz, 2006).
4. Efficient capital allocation due to proper internal decision-making makes companies that have implemented ERM invest in projects with greater present value, to improve company performance (Liebenberg & Hoyt, 2003), (Hoyt & Liedenberg, 2011).
5. ERM reduces revenue fluctuations by increasing the likelihood of companies investing in profitable projects that can be funded internally (Liebenberg & Hoyt, 2003).

Table 1. Justification of ERM Implementation Maturity Measurement Indicators

No.	Criterion Zhao et.al (2013)	Criterion Misbah (2017)	Justification
1	Commitment of the Board of Directors and Senior Management	Commitment of the company owner	The structure of a medium-sized company that is equivalent in position to the Board of Directors is the owner of the company or the Manager
2	ERM Ownership	Field Executor, Manager, or owner	Medium-sized industrial enterprises still do not have a special section that handles ERM. In Indonesia, those who carry out risk monitoring and supervision with direct implementation in the field are supervisors.
3	Risk Appetite and Tolerance	Acceptable risk level and tolerable risk level	The company's decision to carry out more than one project / business taking into account the business capabilities of medium industries.
4	Risk Awareness Culture	Risk Awareness Culture	-
5	Resources	Resources	-
6	Risk identification, analysis, and response	Risk identification, analysis, and response	-
7	Stages of iterative process and dynamic ERM	Stages of an ongoing and updated enterprise risk management process	The risk management framework process is applied by medium-sized industrial enterprises on an ongoing and continuous basis
8	Utilization of Risk as an Opportunity	Utilization of Risk as an Opportunity	-
9	Risk communication	Risk communication	-
10	Common Risk Language	Common Risk Language	-
11	Risk Management Information System	Risk Management Information System	-
12	Training Program	Training Program	-
13	Key Risk Indicator	Setting thresholds for indications of opportunities for the presence and occurrence of risks	Adjustment of the term key risk indicator because it is still unfamiliar to medium-sized industrial enterprises.
14	Integration of ERM on Business Processes	Implementation of company risk management in the process medium industry	Adjustment of the term integration because it is still unfamiliar to medium-sized companies
15	Goal Setting	Clarity of company goals	-
16	Controlling, review, and improvement of the ERM framework	Controlling, review, and improvement of the ERM framework	-

Development of an ERM Implementation Maturity Measurement Model

Enterprise Risk Management (ERM) is one approach that goes far beyond the siloed approach (siloed approach; Gordon, et al., 2009). This approach is a holistic approach in identifying possible company risks and determining appropriate responses in accordance with the company's risk

appetite (Zhao, et al., 2013). According to Hillson (1997), to know, establish, and improve the process of implementing risk management in an organization, a maturity assessment process is needed. Furthermore, the maturity of an organization's risk management describes the level of understanding of risk, the extent of the organization's ability to handle risk, and how the process is implemented. One way to find out the integrated risk management carried out by the company can be seen from the level of maturity of the implementation of the risk management system. So far, there have been no research studies related to the ERM maturity level of medium-sized industrial companies in Indonesia. Several studies on the implementation of ERM conducted in Indonesia are studies that measure the application of ERM to a sample of companies listed on the Indonesia Stock Exchange (public companies), especially for companies engaged in banking and financial institutions (Agustina & Baroroh (2016); Chairani & Siregar (2021); Faisal, et al., 2018; Iswajuni, et al.,2018). Therefore, researchers conducted preliminary identification by collecting several literature reviews related to measuring the maturity/maturity level of ERM. Furthermore, from the results of the literature review, the criteria were determined to measure the level of risk management maturity in medium-sized industrial companies in East Java which were sampled in this study.

In this study, cross-checking was also carried out with the ERM criteria used in the Misbah research (2017). The reason why researchers chose the ERM maturity measurement model from Misbah's (2017) research is that Misbah's (2017) research also adopted the Zhao model, et al., 2013. In addition, Misbah (2017) also cross-checked several ERM criteria that have been applied to 3 (three) national companies in Indonesia, one of which is a construction company of state-owned enterprises. From the comparison, it was found that the Zhao, et al. model is more comprehensive than the third model. A total of 54 (81.81%) of the 66 sub-criteria on all three models while the rest were not. On the other hand, there are 12 sub-criteria obtained in the three comparison models but not included in the sub-criteria of the Zhao, et al., 2013 model. The twelve sub-criteria became additional sub-criteria used in the ERM maturity model in Misbah's (2017) study. The criteria for the comparison results were then justified based on the characteristics of the respondents in this study, namely medium-scale industrial companies, where for this purpose, interviews were conducted in addition to being combined with the measurement model in the Misbah research (2017). This is done by researchers to make it easier for respondents to understand the content of the questionnaire and not to be biased when answering statements from the questionnaire.

METHODOLOGY

Population and Sample

The population in this study is medium-sized industrial companies located in 38 cities/regencies in East Java. The sampling process is carried out using quota sampling techniques and using questionnaires in data collection. The respondent criteria are managers of medium-sized industrial companies that are in 6 priority sectors and have a workforce of 20-99 people. The distribution of research sample data that was successfully obtained and used in this study is presented in Table 2.

Operational Definition of Variables

The operational definition of ERM implementation in this study is the application or use of a holistic approach in identifying the risks of medium-sized industrial enterprises in an integrated manner that describes the level of understanding of risks and the level of company ability to implement risk management processes (Gordon, et al., 2009; Zhao, et al., 2013; Hilson, 1997). The model of measuring the maturity of ERM implementation in this study is the result of the development of the model used by Zhao, et al. (2013) and Misbah (2017). The measurements used include 16 criteria as the commitment of the board and senior management; ERM ownership; appetite and risk tolerance; risk-aware culture; proper resources; identification, analysis, and risk response; steps of an iterative and dynamic ERM process; seize risks as opportunities; risk communication; common risk languages; risk management information system; training program; formal risk indicators; integration of ERM into business processes; objective setting; and monitoring, reviewing, and improving the ERM framework.

Table 2. Research Samples – Priority Sectors

City Code	Region Regency/City	Food & Beverage	Chemistry	Textiles & Apparel	Automotive	Electronic	Pharmacy	Total
3501	Pacitan	1		1				2
3502	Ponorogo	1	1	1		1		4
3503	Treanggalek	2	1	1		1		4
3504	Tulungagung	1		1				2
3505	Blitar	1	1	1				3
3506	Kediri	1	1	1		1		4
3507	Malang	2	1	1	1	1		5
3508	Lumajang	1		1				2
3509	Jember	2	1	1				3
3510	Banyuwangi	1	1	2		1		4
3511	Bondowoso	2	1	1				3
3512	Situbondo	1		1				2
3513	Probolinggo	1	1	1				3
3514	Pasuruan	1	2	1	2	1	2	6
3515	Sidoarjo	1	2	1	3	1	2	6
3516	Mojokerto	1	1	1	1	1	1	6
3517	Jombang	1		1				2
3518	Nganjuk	1						1
3519	Madiun	1	1		1			3
3520	Magetan	2	1	1				3
3521	Ngawi	1	1					2
3522	Bojonegoro	1		1				2
3523	Tuban	1	1	1				3
3524	Lamongan	1	1	1				3
3525	Gresik	1	1	1	1	1	1	6
3526	Bangkalan	1	1					2
3527	Sampang	1						1
3528	Pamekasan	1						1
3529	Sumenep	1		1				2
3571	Kota Kediri	2		1				2
3572	Blitar city	1		1				2
3573	Malang city	1		2	1	1		4
3574	Probolinggo city	1		1	1			3
3575	Pasuruan city	1			1			2
3576	Mojokerto city	1					1	2
3577	Madiun city	1	1					2
3578	Surabaya city	1	1	1	1	3	3	6
3579	Batu city	1		2			1	3
	Total	43	24	33	13	14	10	137

Data Analysis Technique

The validity and reliability of questionnaire feasibility are tested using the Pearson Correlation test. The reliability test was measured using Cronbach Alpha at a limit of 0.6. The indicator is said to be real if the Cronbach Alpha value > 0.6. Validity test implementation using Pearson Correlation Product Moment. The indicator is said to be valid if it has a Pearson Correlation value of > 0.2638. The results

of the reliability test (Table 3) are known that the value of Cronbach's Alpha of each variable is greater than 0.7. This shows that the indicators in this study are reliable and can measure precisely the variables studied. While the results of the validity test (Table 4) show that all indicators in the questionnaire are valid at a significance level of 1% and can measure the variables to be studied precisely and accurately (> 0.2638). The values in questioner use a Likert scale with a range of values 1 – 4. This value eliminates the choice of a medium so that the respondent's answer becomes measurable. The scale of respondents' values and answer indications can be seen in Table 5. The respondents' total answer scores on 16 indicators ranged from 16 to 64. Measurement of ERM implementation using scoring, the higher the score, the closer it is to optimal. The optimal implementation of ERM is risk management carried out thoroughly with principles and processes that have been integrated into business processes. The risk monitoring and implementation system has been updated periodically. On the contrary, the lower the score, the weaker the implementation of ERM is, that is, risk management is carried out non-formally, there are principles and standards both written and unwritten, but risk management is still not updated periodically, and the understanding of risk is still basic.

Table 3. Reliability Test

Variable	Cronbach's Alpha
Enterprise Risk Management	0.738

Table 4. Validity Score

		ERM01	ERM02	ERM03	ERM04	ERM05	ERM06	ERM07	ERM08	ERM09	ERM10	ERM11	ERM12	ERM13	ERM14	ERM15	ERM16	total
ERM01	Pearson Correlation	1	.267**	.283**	.301**	.223**	.226**	.175*	.386**	.249**	,133	.214*	,153	.283**	.253**	,073	.326**	.483**
	Sig. (2-tailed)		,002	,001	,000	,009	,008	,041	,000	,003	,122	,012	,074	,001	,003	,394	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM02	Pearson Correlation	.267**	1	,139	,162	.236**	.372**	,166	.290**	.335**	.181*	-,005	.215*	.248**	.394**	.286**	.301**	.481**
	Sig. (2-tailed)	,002		,105	,058	,006	,000	,053	,001	,000	,034	,957	,011	,003	,000	,001	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM03	Pearson Correlation	.283**	,139	1	,085	.241**	.204*	.217*	.211*	.331**	,157	-,036	.251**	.380**	.209*	,164	,161	.435**
	Sig. (2-tailed)	,001	,105		,321	,004	,017	,011	,013	,000	,067	,674	,003	,000	,014	,056	,061	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM04	Pearson Correlation	.301**	,162	,085	1	.225**	.292**	.470**	.318**	,168	.344**	.229**	,122	.357**	.402**	.341**	.318**	.566**
	Sig. (2-tailed)	,000	,058	,321		,008	,001	,000	,000	,050	,000	,007	,156	,000	,000	,000	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM05	Pearson Correlation	.223**	.236**	.241**	.225**	1	-,015	.176*	.281**	.219*	.189*	,113	.188*	.455**	.408**	.357**	,133	.473**
	Sig. (2-tailed)	,009	,006	,004	,008		,864	,040	,001	,010	,027	,188	,027	,000	,000	,000	,122	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM06	Pearson Correlation	.226**	.372**	.204*	.292**	-,015	1	.365**	.172*	.295**	.307**	.179*	.278**	.203*	.236**	,105	.376**	.504**
	Sig. (2-tailed)	,008	,000	,017	,001	,864		,000	,044	,000	,000	,036	,001	,017	,006	,222	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM07	Pearson Correlation	.175*	,166	.217*	.470**	.176*	.365**	1	.270**	.399**	.414**	,133	,143	.488**	.273**	.285**	.427**	.601**
	Sig. (2-tailed)	,041	,053	,011	,000	,040	,000		,001	,000	,000	,121	,096	,000	,001	,001	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM08	Pearson Correlation	.386**	.290**	.211*	.318**	.281**	.172*	.270**	1	.282**	.175*	.210*	,146	.326**	.354**	.272**	.238**	.543**
	Sig. (2-tailed)	,000	,001	,013	,000	,001	,044	,001		,001	,040	,014	,090	,000	,000	,001	,005	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM09	Pearson Correlation	.249**	.335**	.331**	,168	.219*	.295**	.399**	.282**	1	.309**	,107	.182*	.387**	.313**	.268**	.425**	.575**
	Sig. (2-tailed)	,003	,000	,000	,050	,010	,000	,000	,001		,000	,213	,033	,000	,000	,002	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM10	Pearson Correlation	,133	.181*	,157	.344**	.189*	.307**	.414**	.175*	.309**	1	.266**	.503**	.419**	.262**	.383**	.400**	.636**
	Sig. (2-tailed)	,122	,034	,067	,000	,027	,000	,000	,040	,000		,002	,000	,000	,002	,000	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM11	Pearson Correlation	.214*	-,005	-,036	.229**	,113	.179*	,133	.210*	,107	.266**	1	.336**	.228**	.222**	,127	.415**	.458**
	Sig. (2-tailed)	,012	,957	,674	,007	,188	,036	,121	,014	,213	,002		,000	,007	,009	,140	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM12	Pearson Correlation	,153	.215*	.251**	,122	.188*	.278**	,143	,146	.182*	.503**	.336**	1	.318**	.182*	,113	.170*	.530**
	Sig. (2-tailed)	,074	,011	,003	,156	,027	,001	,096	,090	,033	,000	,000		,000	,034	,190	,046	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM13	Pearson Correlation	.283**	.248**	.380**	.357**	.455**	.203*	.488**	.326**	.387**	.419**	.228**	.318**	1	.417**	.495**	.434**	.727**
	Sig. (2-tailed)	,001	,003	,000	,000	,000	,017	,000	,000	,000	,000	,007	,000		,000	,000	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM14	Pearson Correlation	.253**	.394**	.209*	.402**	.408**	.236**	.273**	.354**	.313**	.262**	.222**	.182*	.417**	1	.515**	.536**	.653**
	Sig. (2-tailed)	,003	,000	,014	,000	,000	,006	,001	,000	,000	,002	,009	,034	,000		,000	,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM15	Pearson Correlation	,073	.286**	,164	.341**	.357**	,105	.285**	.272**	.268**	.383**	,127	,113	.495**	.515**	1	.485**	.578**
	Sig. (2-tailed)	,394	,001	,056	,000	,000	,222	,001	,001	,002	,000	,140	,190	,000	,000		,000	,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
ERM16	Pearson Correlation	.326**	.301**	,161	.318**	,133	.376**	.427**	.238**	.425**	.400**	.415**	.170*	.434**	.536**	.485**	1	.684**
	Sig. (2-tailed)	,000	,000	,061	,000	,122	,000	,000	,005	,000	,000	,000	,046	,000	,000	,000		,000
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137
total	Pearson Correlation	.483**	.481**	.435**	.566**	.473**	.504**	.601**	.543**	.575**	.636**	.458**	.530**	.727**	.653**	.578**	.684**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	,000	
	N	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137	137

Table 5. Likert Scare

Score	Indication of Answers
1	strongly disagree, meaning that the situation never happened in your company
2	disagree, meaning that the circumstances are sometimes or 50% probability of such circumstances occurring in your company
3	agree, meaning that such circumstances occur frequently, or the probability of such circumstances is 75% in your company
4	strongly agree, meaning that the situation always occurs in your company

ANALYSIS AND DISCUSSION

Respondent Profile

Most respondents from the food and beverage sector were 31.4%, the textile and apparel sector was 24%, the chemical sector was 17.5%, the pharmaceutical and medical device sector was 10.2%, the automotive sector was 9.5%, and the electronic goods sector was 7.3%. In terms of the distribution of the largest middle industry respondent areas in Sidoarjo regency and the city of Surabaya, each of which amounted to 10 respondents. While most respondents' positions/positions are owners/directors, namely 47%, managers by 34%, and the rest are managers. In terms of labor, most of the Medium Industries have 20-39 workers as much as 82%, IM has 40-59 as much as 12%, and IM has 60-99 as much as 5%. In terms of business age, most Middle Industry respondents aged 1-9 years as much as 33.6%, aged 10 - 19 years as much as 24.8%, aged 20 - 29 years as much as 23.4%, aged 30 - 39 years as much as 10.2%, and the rest aged 40 - 61 years.

Analysis

The mean value and the overall ERM implementation indicator are 414.5 (Table 6). Based on calculations, the implementation of Enterprise Risk Management (ERM) is optimal. This shows that risk management in priority sector Medium Industry companies in East Java is carried out thoroughly with principles and processes that have been integrated into business processes. The risk monitoring and implementation system has been updated periodically accompanied by risk management training. Indications of optimal implementation can be seen from the highest total score in ERM 16 where the company manages risks regularly. While the lowest total score is in the ERM 12 indicator which means that at least the company has sent staff to attend risk training. These optimal conditions are supported by a statement in ERM 7 that the company's management conducts a risk management process on a regular basis. When they have managed risks regularly, Middle Industry employees know the term risk (ERM 10), all personnel knows the company's goals (ERM 15), have access to information and can communicate it (ERM 9). This makes the risk management system integrated within the company and is carried out in all business activities.

Based on calculations, ERM has been optimally implemented in all sectors. This shows that the priority sector of Medium Industries in East Java has implemented comprehensive risk management with principles and processes that have been integrated into business processes. The average ERM implementation of the food & beverage sector is among the lowest compared to other sectors. The lowest ERM implementation value can be seen from ERM12 where the company has never sent staff or anyone in the company to attend seminars or training or learn about risk management. Meanwhile, the motor vehicle, trailer, and semi-trailer sectors are the sectors that have the highest level of ERM implementation, and the second is the computer, electronic goods, and optical goods sectors. The highest implementation value can be seen from ERM1 and ERM 5, that the company has determined or made decisions with risk in mind, and the company has provided the budget, time, human resources, systems, and technology to support risk management activities (Table 7). Chemistry and chemical are at weak levels related to ERM 11 and ERM 12. Both weaknesses are seen in companies that have not considered using information technology and have also never sent company staff in training on risk management. The implementation of ERM in the textile and apparel sector, the motor vehicle sector, trailers, semi-trailers, the computer sector, electronic goods, and optics are categorized as optimal. This is shown by the performance of the 16 indicators measured.

Table 6. Total ERM Implementation Score

Indicator	Statement	Grading Scale				Total
		1	2	3	4	
ERM 1	The company's management determines or makes decisions by considering risks in the implementation of the company's projects/transactions/efforts consistently	3	3	18	113	458
ERM 2	If there is a risk in the company, the responsibility for making decisions lies with the highest leadership (the highest person in charge) in each part/project	2	1	53	81	428
ERM 3	The company can carry out several activities at once	5	7	37	88	423
ERM 4	Everyone in the company understands the benefits of having a risk management process in the company	5	17	43	72	406
ERM 5	The company's management provides the necessary budget, time, human resources, systems, and technology as support and commitment to risk management activities	2	5	31	99	440
ERM 6	The Company identifies all categories of potential risks from both internal and external sources of risk that will be faced by the company	2	10	43	82	421
ERM 7	The risk management process (including monitoring, identifying, and assessing risks that may arise due to environmental changes) is carried out repeatedly and continuously	4	14	32	87	419
ERM 8	The company is able to seize the opportunity by assessing possible losses and benefits to increase competitive advantage	9	7	36	85	419
ERM 9	All staff have access to relevant and accurate information and communicate it to determine response strategies	1	11	44	81	411
ERM 10	All individuals in the company understand well the terms or language related to risk management	7	31	36	63	374
ERM 11	The company has implemented or is considering using information technology (it could be one of these: application/ computerization/ register machine/ barcode)	17	21	32	67	385
ERM 12	The company has sent staff or anyone in the company to attend seminars or training or learn about risk management	43	23	20	51	309
ERM 13	The company has indicators that are easy to measure and monitor to identify the occurrence of risks within the company	14	11	29	83	410
ERM 14	All activities related to the company's main business processes are carried out guided by the risk management framework and are carried out consistently by all staff and company owners	5	8	25	99	438
ERM 15	All staff/employees of the company know the purpose of the company in running its business and understand the performance measures of each company's goals	5	6	25	101	441
ERM 16	The company's management periodically measures the progress of risk management, plans next, and monitors the conformity of policies and plans with the framework of risk management	4	4	24	105	450
	Mean					**414.5**

Table 7. ERM Implementation by Sector

No.	Statement	Food & Beverage	Chemistry	Textiles & Apparel	Automotive	Electronic	Pharmacy
ERM 1	Commitment of the Board of Directors and Senior Management	3,65	3,73	3,75	4,00	3,80	3,92

ERM 2	ERM Ownership	3,51	3,64	3,29	3,71	3,60	3,77
ERM 3	Risk Appetite and Tolerance	3,35	3,45	3,75	3,64	3,70	3,54
ERM 4	Risk Awareness Culture	3,05	3,36	3,50	3,71	2,80	3,85
ERM 5	Resources	3,47	3,64	3,79	4,00	3,40	3,92
ERM 6	Risk identification, analysis, and response	3,40	3,45	3,46	3,64	3,70	3,69
ERM 7	Stages of iterative process and dynamic ERM	3,40	3,36	3,58	3,50	3,30	3,92
ERM 8	Utilization of Risk as an Opportunity	3,26	3,27	3,50	3,93	3,40	3,85
ERM 9	Risk communication	3,33	3,52	3,46	3,64	4,00	3,54
ERM 10	Common Risk Language	2,98	2,88	3,67	3,43	2,40	3,54
ERM 11	Risk Management Information System	2,95	2,39	3,50	3,86	3,10	3,69
ERM 12	Training Program	2,33	2,12	3,17	3,07	2,30	3,15
ERM 13	Key Risk Indicator	3,07	3,24	3,54	3,64	3,30	3,62
ERM 14	Integration of ERM on Business Processes	3,33	3,76	3,71	3,79	3,50	3,69
ERM 15	Goal Setting	3,51	3,55	3,83	3,79	3,40	3,77
ERM 16	Controlling, review, and improvement of the ERM framework	3,51	3,73	3,71	3,93	3,70	3,77
	Mean	**3,25**	**3,32**	**3,58**	**3,71**	**3,34**	**3,70**

The implementation of ERM in pharmaceutical products, chemical medicines products, and traditional medicines is relatively weak, especially in ERM 10 and ERM 12. It seems that all personalities in the company still do not understand the language of risk (ERM 10). Overall, ERM implementation appears weakest in the ERM 12 indicator indicated by 3 sectors out of the 6 existing priority sectors. Based on calculations (Table 8), the implementation of ERM in all districts/cities in East Java is categorized as optimal. The average implementation of ERM in Kediri City consisting of 2 food industries and 1 apparel industry is the lowest at 2.83. The lowest indicator can be seen from ERM 8 where companies sometimes seize opportunities to increase competitive advantage; ERM 13 (companies sometimes have indicators that are easy to measure); ERM 12 (the company has never sent staff to attend training on risk management); and ERM 14 (business activities are still inconsistent and thoroughly carried out by all staff). The implementation of ERM is highest in Sampang Regency which consists of 1 food industry with an average of 3.75, and Sidoarjo Regency with an average value of 3.73. While Ponorogo Regency, which consists of the food & beverage, chemical, textile & clothing, and pharmaceutical sectors, the implementation rate is relatively weak, especially in ERM 8 (companies can take advantage of opportunities by assessing possible losses and benefits to increase competitive advantage). Likewise, Tulungagung Regency, which consists of the food & beverage, textile & clothing sectors, has a weak implementation level, shown in ERM 5, ERM 11, and ERM 12. The relatively weak level of ERM implementation also occurred in Kediri Regency as indicated by ERM 10, ERM 12, and ERM 13.

Table 8. Implementation of ERM by city / regency in East Java

kode kota	wilayah	ERM1	ERM2	ERM3	ERM4	ERM5	ERM6	ERM7	ERM8	ERM9	ERM 10	ERM 11	ERM 12	ERM 13	ERM 14	ERM 15	ERM 16	Mean	Kategori
3501	Kabupaten Pacitan	4	4	3,5	4	4	4	4	4	4	3	3,5	2,5	3	4	4	4	3,72	Optimal
3502	Kabupaten Ponorogo	4	4	3,25	3	3,75	4	3,25	2,25	4	3,5	3,25	4	4	3,25	4	3,75	3,58	Optimal
3503	Kabupaten Treanggalek	4	3,4	3,6	3,4	3,8	3,4	3,6	3,8	3,2	3,8	3	2,8	3,4	3,4	3,6	3,4	3,475	Optimal
3504	Kabupaten Tulungagung	4	4	3,5	4	2,5	4	4	3,5	3,5	3,5	2,5	1	4	3,5	4	4	3,47	Optimal
3505	Kab. Blitar	3,33	3,67	3,333	2,67	3,33	4	2,67	3,67	3,67	1,67	3,67	4	3	3,67	3,67	4	3,38	Optimal
3506	Kab. Kediri	4	3,4	3,2	3,8	3,6	3,6	3,4	3,6	3,6	2,4	2,6	1,8	2,4	3,8	2,8	3,6	3,23	Optimal
3507	Kab. Malang	3,7	3,5	3,3	3,3	3,7	3,5	3,5	3,5	3,5	2,8	3,3	2,3	3,7	3,8	3,7	3,8	3,44	Optimal
3508	Kab. Lumajang	4	4	3,5	3,5	4	2,5	3	3	2,5	2	1,5	1,5	3,5	4	3,5	3,5	3,09	Optimal
3509	Kab. Jember	3,5	3,25	3,5	2,75	3,5	3,5	3,25	4	3,25	2,75	3,5	2	2,5	3,75	3,25	3,75	3,25	Optimal
3510	Kab. Banyuwangi	3,8	3,8	3,6	3,4	3,6	3,6	3	3,6	3,4	3,2	3	2,4	2,8	3,6	3,6	3,4	3,36	Optimal
3511	Kab. Bondowoso	3,75	3,25	3,5	3	3,5	3,75	3,25	2,75	3,25	2,5	2,75	1,5	3	3,25	3,25	3	3,08	Optimal
3512	Kab. Situbondo	4	3,5	3,5	3,5	3,5	3	3,5	3,5	3,5	4	3	3,5	3,5	3	3,5	3,5	3,47	Optimal
3513	Kab. Probolinggo	3,5	3,5	1,5	3,5	3,5	3	3,5	2,5	2,5	3,5	3	2	3,5	3,5	3,5	3,5	3,09	Optimal
3514	Kab. Pasuruan	3,78	3,89	3,56	3,56	3,5	3,89	4	3,89	3,67	2,78	3,33	2,67	3,11	3,56	3,67	3,67	3,53	Optimal
3515	Kab. Sidoarjo	4	3,82	3,91	3,55	4	3,82	3,82	3,64	3,64	3,55	3,64	3,18	3,55	3,82	3,73	4	3,73	Optimal
3516	Kab. Mojokerto	4	3,6	3,6	3,8	3,8	3,2	4	3,8	3,2	3	3,8	2,4	4	4	3,8	4	3,63	Optimal
3517	Kab. Jombang	3,5	3	4	2,5	3,5	3,5	3	3,5	3	3	3	1,5	2,5	3	3,5	3	3,06	Optimal
3518	Kab. Nganjuk	1	4	4	1	4	4	4	1	4	4	1	2	1	4	4	4	2,94	Optimal
3519	Kab. Madiun	2,67	3	3	3,67	4	3	3,33	3,33	4	3,67	3	3,33	3	3,67	4	3	3,35	Optimal
3520	Kab. Magetan	3, 75	3, 75	3, 75	3, 75	3, 75	3, 75	3,5	3, 75	3	3, 5	3, 25	2, 75	3, 5	3, 5	3, 5	3	3, 48	Optimal
3521	Kab. Ngawi	3, 5	3, 5	3, 5	2, 5	4	2, 5	2, 5	2, 5	3, 5	3	3, 5	2, 5	2, 5	4	3, 5	2, 5	3, 09	Optimal
3522	Kab. Bojonegoro	2, 5	3, 5	3, 5	3	3, 5	3	4	3	4	2, 5	3, 5	2	3, 5	3	3	3	3, 16	Optimal
3523	Kab. Tuban	3, 67	3, 33	3	3, 67	3, 67	3, 67	3, 67	3	2, 67	3	2	1, 67	3	4	4	4	3, 25	Optimal
3524	Kab. Lamongan	3, 333	3, 667	3, 667	3, 333	3, 67	3, 667	4	2, 67	3, 33	4	2, 67	4	4	4	4	4	3, 63	Optimal
3525	Kab. Gresik	4	3, 5	3, 5	3, 3	3, 7	3, 3	3, 3	3, 8	3, 8	3	3, 3	2, 2	3, 5	3, 7	3, 5	3, 8	3, 46	Optimal
3526	Kab. Bangkalan	4	3, 5	3, 5	3, 5	4	3	3	3	3	2, 5	3	2	4	4	4	4	3, 38	Optimal
3527	Kab. Sampang	4	3	4	3	4	4	4	4	4	4	2	4	4	4	4	4	3, 75	Optimal
3528	Kab. Pamekasan	4	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	2, 94	Optimal
3529	Kab. Sumenep	3, 5	3, 5	3, 5	3, 5	4	3, 5	3, 5	3, 5	3, 5	3, 5	1, 5	1, 5	4	3, 5	4	4	3, 38	Optimal
3571	Kota Kediri	4	3	3, 67	3	2, 33	2, 67	3	2	4	2, 67	2	2	2	2	3	4	2, 83	Optimal
3572	Kota Blitar	4	3	3, 5	3	3, 5	3, 5	3, 5	3	3	3, 5	3, 5	3, 5	3, 5	3, 5	3, 5	3, 5	3, 41	Optimal
3573	Kota Malang	3, 8	3, 6	3, 2	3, 6	3, 8	3, 4	3, 6	3, 6	3, 8	3, 6	3, 4	2, 8	3	3, 6	3, 8	3, 8	3, 53	Optimal
3574	Kota Probolinggo	3, 67	3, 67	3, 33	3	3	3	3	3, 33	3	2, 33	3	2	2, 67	3, 33	3, 33	3, 67	3, 08	Optimal
3575	Kota Pasuruan	3, 5	3, 5	3	3, 5	3, 5	3, 5	4	4	3	4	2, 5	3	4	4	4	4	3, 56	Optimal
3576	Kota Mojokerto	4	3, 33	4	3	4	4	4	2, 67	4	2	2, 33	2	4	3, 33	3, 67	4	3, 4	Optimal
3577	Kota Madiun	4	3, 5	4	4	3, 5	4	3, 5	3, 5	3, 5	3, 5	3, 5	1	3, 5	2, 5	4	4	3, 47	Optimal
3578	Kota Surabaya	3, 9	3, 4	3, 8	3, 1	3, 8	3, 1	3	3, 9	3, 7	3, 7	3, 6	3, 6	3, 7	3, 7	3, 6	3, 7	3, 58	Optimal
3579	Kota Batu	3, 75	3, 75	3, 75	3	3, 75	3, 75	3, 5	3, 75	3, 75	3	2, 75	2, 25	3, 75	3, 75	3, 75	3, 75	3, 48	Optimal

Discussion

Medium industrial companies that have been optimal in implementing ERM are indicated to experience sales growth. This is a positive signal indicating that the company can handle risks well. Companies that have implemented ERM can identify and manage risks, expand opportunities, increase positive outcomes, reduce deviations, and create sustainable business systems. The implementation of ERM can reduce the risk of loss to make the company maximize opportunities. The risk of loss can be minimized by having quality resources, utilizing them effectively, and improving the quality of performance and decision making which is ultimately useful in determining the appropriate response to events that have the potential to become opportunities or threats. Companies with an ERM implementation level is optimal are indicated tend to experience an increase in sales, an increase in net profit, and stable assets. Of the 131 medium-sized industrial companies whose has the optimal level of ERM implementation, shown that 43.5% experienced an increase in sales, 46.6% experienced an increase in net profit, and 23.7% experienced asset growth. Meanwhile, companies with weak levels of ERM implementation maturity, get 50% of their assets stable, 67% decreased sales, and 67% decreased net profit. Sales growth is the goal of the company and the main business process. The company's activities relate to sales, and the sustainability of the business is also determined by sales. A growing company will experience sales growth. The implementation of ERM will effectively support the achievement of expected performance. This is possible because the implementation of ERM will reduce internal and external risks that lead to financial losses. The implementation of ERM can reduce uncertainty and make it easier for management to manage overall business activities so that it can increase sales.

CONCLUSIONS AND RECOMMENDATIONS

The results of this study indicate that all medium-sized priority sector industrial companies in East Java have implemented integrated risk management (ERM) and have reached the optimal maturity level in implementing ERM. From the 16 indicators of measuring the maturity level of ERM implementation, it was found that ERM 12 is the weakest indicator in all companies. The results of the study also found that the automotive and electronics industry sectors are 2 industrial sectors that have the highest level of maturity in implementing ERM. Meanwhile, the lowest maturity level occurred in the food and beverage industry sector.

Corporate managers or practitioners need to understand how different individuals and groups within the organization define risk, understand potential biases in risk assessment, and present challenges for companies to take the initiative to implement risk management. This challenge offers an opportunity for companies to look at risk-related issues internally and collaborate with researchers to produce research that provides solutions. It should be noted that this study produced guidance on the assessment of the results of the implementation of ERM in each company with a smaller or medium scale. Overall, the results of this research offer a new domain for management researchers to discover and explore theoretically important questions that also have important implications for risk management practices. The results of this study are in the form of a holistic assessment guide for company risk management that can be utilized by government and private institutions, especially medium-scale companies in assessing the maturity level of risk management that has been carried out by the company. The assessment results can then be used to plan a corporate risk management strategy that is able to answer and minimize company risks holistically. Government institutions, especially those related to medium-scale industries, can take advantage of the results of this research in planning activities for coaching and developing medium-scale industries in stages.

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