

Conference Paper

A Case Study of Enterprise Risk Management Implementation and its Impact on Sustainability Performance in State Government-Linked Company

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Abstract.

Enterprise Risk Management (ERM) is an approach that systematically assesses, treats, monitors, and reviews risks to enhance an enterprise's value and its ability to anticipate and prepare for imminent risks. Previous studies have mainly focused on the impact of ERM implementation on financial performance, while its relationship with non-financial performance, particularly sustainability performance, has received less attention. This study aims to explore the level of ERM implementation and develop a framework to investigate its effect on sustainability performance, encompassing economic, environmental, and social aspects. The study proposes a questionnaire survey to be distributed to respondents involved in risk management implementation, such as the risk committee, risk management workgroup, and the top corporate risk working group, among state government-linked companies. By gathering insights on companies' ERM implementation and sustainability performance, the study aims to conceptualize the relationship between the two. For data analysis, the statistical package for social sciences (SPSS) is proposed to investigate relationships between constructs and latent variables. Understanding the penetration level of ERM implementation and its impact on sustainability performance will offer valuable insights for formulating strategies to improve the overall performance of state government-linked companies.

Keywords: enterprise risk management, sustainability performance, COSO framework, government linked companies

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1. Introduction

Managing risk has become a significant firm performance determinant and stakeholders have become more sensitive to it. There are inherent risks in the activities of organizations, or it would be a significant factor of uncertainties. Various issues such as economic volatility, social and political strains, environmental sensitivity, and technological instabilities, have significant negative impacts on firm performance (Faisal et al., 2021). These unsustainable behaviours can produce risks to an organizations reputation and eventually result in the collapse of organization. Pertaining to this matter, several strategies are employed to sustain businesses, and then businesses are exposed to many risks which can negatively impact their performance. The organisation often encounters both micro and macro types of risk (Abdul & Khan, 2014). Macro risks can be political or caused by macroeconomic factors outside of the government's control. Micro risks are firm-specific risks that can stem from political, economic, governmental, or societal events that have occurred in the host country.

Through this discussion, the organizations have recognized the importance of non-financial performance particularly sustainability performance. (I. A. Abbasi, Ashari, & Yusuf, 2023; S. Q. A. Shah et al., 2021). Several strategies have been utilized to improve or increase sustainability performance. These strategies incorporate modern technology, financial resources, intellectual capital innovation orientation, knowledge management and enterprise risk management (Al-Nimer et al., 2021). Due to consistent properties of reducing risk and financial loss, enterprise risk management (ERM) was found to be the most relevant and significant predictor of sustainability performance (Kashif Shad & Lai, 2019). ERM involves adopting cutting-edge technologies, providing, and updating relevant and existing products in accordance with consumer needs to achieve sustainable performance (Abdul et al., 2021). Organizations that do not adopt the ERM have a lower probability of survival in a dynamic environment.

After the financial crisis of 2007-2008, most financial institutions implemented an ERM framework to reduce potential risk. In 2018, the Committee of Sponsoring Organizations for the Treadway Commission (COSO) and the World Business Council for Sustainable Development (WBCSD) released a guide for the implementation of ERM to sustainability risks. The guidance offers significant implications for integrating COSO's ERM framework into managing sustainability risks. A significant increase in sustainability-related issues makes it necessary for organizations to implement ERM as a tool to manage sustainability risks and improve firm performance. (WBCSD, 2017). Therefore, the implementation of ERM has been highly recognized by management as a strategic

approach for managing the risks confronted by the firms in a holistic way. Through the implementation of ERM, enterprises easily understand and control the level of risk across the company. Currently, the implementation of ERM has become a corporate strategy for creating value for the company's stakeholders.

The concept of enterprise risk management (ERM) has been widely discussed by academics and practitioners in recent years. ERM implementation is a growing concern with the key objective of enhancing firm value particularly financial performance. Various studies have been performed to examine the impact of ERM on financial performance. But in previous research, the relationship between ERM implementation and non-financial performance particularly sustainability performance has received less attention. By supporting this view, Abdul et al. (2021). also mentioned that there is dearth of research between the relationship of enterprise risk management and sustainability performance. Thus, to fill this gap, this study aims to explore the penetration level of ERM implementation and further conceptualizes a framework to explore its effect on sustainability performance including economic, environmental, and social performance in the state government-linked company.

State government-linked companies are concentrated in this study sample for some reasons. The state government-linked companies use business principles of efficiency to provide goods and services to the public. The state government-owned companies account for over 10% of the world GDP and more than a fifth of the world's largest companies. The state government-owned companies ordinarily function in a different external and internal environment as compared to organizations either in the financial or non-financial sector. (Emma Ann Otieno et al., 2020). Additionally, the unique nature of their functions becomes a challenge for compliance and proper management of uncertainties. In addition, most state-owned companies have poor performance due to a lack of risk identification and management. As a result, they failed to foster economic development and sustainability performance. Therefore, the comprehensive implementation of ERM could enhance the financial and non-financial performance of state government-linked companies.

The remainder of the document is constructed as follows: the next section delivers the literature review. Section three determines the theoretical foundations of this study. Section four proposes the conceptual framework, which is followed by a description of the research methodology. Finally, the last section provides a conclusion, suggested implications, and sets the direction for future studies.

2. Literature Review

The devotion to risk management and sustainability performance is gaining attention in both research and practice as well as in all industries. Numerous studies have contributed to the body of knowledge by considering different aspects. This study focuses on two associated streams of literature namely, risk management and sustainability performance. The main debate is on whether organizations may enhance sustainability performance by the comprehensive implementation of enterprise risk management. The variables are explained in subsequent sections with their measurements.

2.1. Enterprise Risk Management

Enterprise Risk management (ERM) was introduced in the 1990s and has established itself as a predominant paradigm. Organizations are abandoning their traditional risk management because it is still growing rapidly as a sign of excellent corporate management in every aspect of business operations. As a result, ERM has received unprecedented attention in recent years (Adam et al., 2021). The organization realized the scope of risk beyond the investment and liability risk to translational risks, operational risks, and technological risks that could hover over an enterprise (Shad et al., 2019). Then, the implementation of ERM understands and manages these risks holistically by creating a culture in a company that is credible and resilient (Dahlan, 2022). From previous literature, both governments and enterprises have recognized the value of ERM in holistically managing business risks. This could help the company to find unnecessary negative uncertainties early on and respond to changes that could affect its performance and harm its shareholders' value. To encourage the comprehensive implementation of enterprise risk management, various frameworks have been developed by related organizations (Shad et al., 2019). The non-regulatory frameworks commonly adopted by enterprises are given in table 1.

TABLE 1: Framework Adopted by the Organization for the Implementation of ERM Implementation.

Sr no.	Framework
1	The Committee of Sponsoring Organizations of the Treadway Commission Enterprise Risk Management Integrated Framework (COSO Framework).
2	AS/NZS 4360:2004: Risk Management Standard.
3	Federation of European Risk Management Associations (FERMA): A Risk Management Standard.
4	ISO31000: Risk management - Principles and Guidelines on Implementation of Enterprise Risk Management.

For this study, the implementation of enterprise risk management will be measured through the ERM integrated framework of the Treadway Commission of USA's Committee of sponsoring organizations (COSO). With the use of COSO framework, the upper management can easily oversee and regulate the effective, competitive, and ethical organizational behaviours (Mukhtar, Shad, & Woon, 2023b). In short, COSO enterprise risk management framework is recommended for delivering its risk reduction effects to enhance the overall firm performance (Lai et al., 2021). All the eight components of COSO integrated framework must be implemented to provide comprehensive implementation of risk management. The COSO framework with all eight elements in shown in Figure 1.



Figure 1: COSO Risk Management Framework.

A risk management benchmarking study was carried out in 2008 by the Global Audit Information Network of the IIA Research foundation and the Institute of Internal Auditors (IIAs). The findings of this survey suggested that COSO's ERM integrated framework is the one that is most frequently utilized to address risk management procedures. Besides that, Alawattegama (2017) suggested that future research should use this systematic integrated model to investigate and empirically analyse the effects of ERM on firm performance.

2.2. Sustainability Performance

The term sustainability was proposed by the Eklington in 1994 to facilitate its applications in research as well as in decision-making. Sustainability performance is a significant term in various sectors and industries these days. Based on sustainability performance, countries are investing a large portion of their financial plans to upgrade their infrastructure (A. Z. Abbasi et al., 2020; I. A. Abbasi et al., 2021; Hussain et al., 2021; Torkayesh et al., 2021). The focus on sustainability performance has caused a paradigm change in business operations because it enables businesses to achieve long-term sustainable growth (Mukhtar, Shad, Woon, et al., 2023b; S. Q. A. Shah et al., 2022). To communicate sustainability performance to stakeholders and business management, sustainability accounting, evaluation, and reporting processes must be implemented (A. Z. Abbasi et al., 2021; Hussain, Ting, et al., 2022; Hussain, Abid, et al., 2023; Hussain, Hooi Ting, et al., 2023). By creating appropriate indicators and measuring them, sustainability accounting must focus on what data should be gathered and for what purpose (I. A. Abbasi, Ashari, Ariffin, et al., 2023; M. K. Shad & Lai, 2015b). For this, organizations require the strong conceptual models. The aspect of assessment is about offering a significance to the collected qualitative and quantitative data by the analytical integration methods.

Once it has been accounted and assessed, the entire sustainability performance can subsequently be reported as a strategic tool for corporate management and communication (Hussain, Abbasi, et al., 2022). Regarding the rating to sustainability performance, third parties utilize the binary values of inclusions in sustainable portfolios. Among others, Bloomberg, the Morgan Stanley Capital Index (MSCI) and Thomson Reuters offer information on sustainability disclosure using scores of economic, social and governance (Kashif Shad et al., 2018; Papoutsi & Sodhi, 2020). Researchers commonly utilise these third parties' ratings or inclusion status as indicators of sustainability performance.

The sustainability performance indicates the organization's endeavours and achievements about the aspects of Triple Bottom Line of sustainability such as economic, environmental, and social practices to investors and other stakeholders (Lai et al., 2021). Enterprises are requiring a significant shift of the company's focus to attain sustainability performance, including all aspects of the Triple Bottom Line mentioned (Shad et al., 2020). The balance between the economic, environmental, and social parameters of organizations is very essential to move toward sustainability (Hamad et al., 2020). The pictorial formation of Triple Bottom Line concept is shown in Figure 2.



Figure 2: *The Triple Bottom Line Concept of Sustainability Performance proposed by Elkington (1994).*

According to the Triple Bottom Line (TBL) concept of sustainability, businesses should pledge to track their progress toward achieving social, economic, and environmental sustainability rather than only concentrating on making a profit (Jan et al., 2021). The TBL framework evaluate the organization's sustainability performance in a broader context to create greater sustainable development. The three aspects of Triple Bottom Line concept of sustainability are explained in following sections.

2.2.1. Environmental sustainability

As a fundamental element of TBL's concept of sustainability performance, environmental sustainability refers to preserving natural resources and protecting global ecosystems to support human health and wellbeing. The most important challenge for organisations in any community is dealing with environmental issues because these unsustainable actions lead to the depletion and degradation of natural resources (Mukhtar, Shad, & Woon, 2023a). To prevent organisations from having an adverse impact on the biophysical environment, they must be motivated toward environmental sustainability. Thus, it can be stated that environmental sustainability is essential for improving the natural environment and to enhancing competitive environmental sustainability.

2.2.2. Economic Sustainability

The economic sustainability as an integrated component of sustainability suggested to create a stable economy that can be resilient to uncertainty such as potential rises in sustainability issues. Due to higher economic interdependence, the global community allocated the economic opportunities to smoothly implement inclusive economic principles on the basis laid by the sustainable development goals (Kashif Shad & Lai, 2019; van Niekerk, 2020). Thus, the emergence of economic sustainability as a progressive disciplinary perspective is very essential to achieve inclusive development growth, and a more sustainable circular economy (Shad & Lai, 2015).

2.2.3. Social Sustainability

Social sustainability is equally important as the other two pillars of sustainability. Social sustainability is a comprehensive framework that incorporates various social aspects such as education, gender equity, salary and social spending, domestic financial statuses, government policies, employment, unemployment rate, poverty rate, and women's involvement in social activities (Mukhtar, Shad, Woon, et al., 2023a; Torkayesh et al., 2021). As well, social sustainability and sustainable development goals (SDGs) are critical aspects for human beings. It ensures that industries do not only focus on profitable activities but also make sure that industrial activities do not cause social degradation (Jan, Lai, & Tahir, 2021; S. A. A. Shah et al., 2022). Therefore, to solve current social issues and increase citizen social satisfaction, organisations should regularly assess their performance in relation to fulfilling social sustainability goals.

2.3. Enterprise Risk Management and Sustainability Performance

Sustainability performance is getting much importance as the sustainable oriented activities for the enterprise. Therefore, enterprise risk management (ERM) practices could be very important for the sustainability of organizations. The ERM practices helps to protect the rights of stakeholders and to achieve the organizational goals. With the help of empirical evidence, it has been found that there is a positive impact of ERM practices on the sustainability performance. For instance, Abdul et al. (2021) examined the impact of ERM practices on the enterprise sustainability and performance. This study used 150 observations from 104 enterprises in Oman. The findings demonstrated that the enterprises which assess their business risk and then adopt different strategies

to manage their risk can visualize their future position and can have better strategies for improving their performance. Furthermore, the effective implementation of ERM practices such as social risks management, economic risk management, and financial risk management provide the advantage to the organizations upon the competitors. Hence, this research work outcome indicated that all type of ERM practices has a positive and significant impact on the enterprise's sustainability.

On the other hand, through the extensive literature, it found that ERM has a positive impact on financial performance. For instance, using a sample of 11 oil and gas public listed companies, Kashif Shad and Lai (2019) examined the impact of ERM practices on financial performance. This study used the COSO's ERM integrated framework for the measurement of ERM practices and return on assets (ROA) was used to measure the financial performance. Performing the regression analysis, the findings showed that four components of ERM framework such as supportive internal environment, objective setting, control, and monitoring activities are the positive and significant predictors for the financial performance. The other four components found insignificant to enhance the financial performance. This study attributed that efficient risk management enhance the risk awareness and help in strategic decision making that could enhance the financial performance.

In the context line of the relationship between ERM and firm's performance, Saeidi et al. (2021) explored the effect of ERM on the firm performance in the 84 Iranian financial institutions. The findings postulated that ERM practices can help the organization to better manage their risks and opportunities which consequently increase the firm performance. Al-Nimer et al. (2021) scrutinized the influence of ERM practices on the firm's financial performance in 228 Jordanians firms. The findings showed that ERM practices build an effective model that engage the managers and responsible executives to compete in the market which further enhances the firm's performance.

Furthermore, Malik et al. (2020) investigated the impact of ERM on firm performance in FTSE350 listed companies of United Kingdom. Based on 260 observations during the 2012-2015, the findings inferred that the effectiveness of ERM helps to achieve its strategic objectives such as strategy, operations, reporting and compliance. That's why the firm's ERM is very essential to enhance the financial performance. Fitriana & Wardhani (2020) analysed the effect of enterprise risk management (ERM) on firm's performance. Using the 734 observations from 324 non-financial companies of Indonesia, Malaysia, Thailand, Singapore, and Philippines during the 2013-2018, the results indicated that risk management system is one of the internal oversight mechanisms that avoid losses

or uncertainties over the risks and this effect of ERM is also proven to be able to deliver the company to achieve company goals such as firm's financial performance.

Conclusively, after the extensive literature on ERM and sustainability performance, it can be concluded that most of the research have merely discussed the impact of ERM on financial performance but the relationship between ERM implementation and non-financial performance particularly sustainability performance has received little attention. It is still an open question for debate that whether the implementation of ERM enhances the sustainability performance. Hence, it would be of significant interest to conduct a research study focusing on ERM implementation and sustainability performance. Therefore, this study aims to explore the penetration level of ERM implementation and further conceptualizes a framework to explore its effect on sustainability performance including economic, environmental, and social performance.

3. Theoretical Framework

This study is proposed that the Resource-Based View (RBV) theory to underpin the relationship between enterprise risk management (ERM) and sustainability performance. The RBV theory proposed by Barney in 1991 which helps to optimize the organizational resources. The RBV theory sheds light on the value of tangible and intangible resources for superior performance (Barney 1991). This theory has been rarely touched in the context of ERM and firm performance (Al-Nimer et al., 2021). The RBV theory has been tested in different domains, but it has not yet been discussed in the context of ERM and firm performance particularly non-financial performance. In the present study, we examined whether the intangible resource, namely ERM, contributed to firm performance or not. According to the RBV theory, the ability of resources in ERM may be able to contribute positively to the company (Bailey, 2022). Therefore, the company will use its best resources in the form of implementing ERM to enhance the sustainability performance through achieving the best possible business outcomes. The value of the company may be created through managing the risks that may occur in the organizations.

4. Conceptual Framework and Hypotheses Development

In research, the conceptual framework serves as a visual representation to help illustrate the expected cause-and-effect relationship (Shad & Lai, 2015). Many studies have been performed for the value creation of sustainability performance through different aspects

but the enterprise risk management implementation (ERM) for the value creation of sustainability performance is the most under-researched area. For instance, Abdul-Rashid et al. (2017) found that the sustainable manufacturing practices help to mitigate the damages caused by the organizational activities, which improves the life quality and protect the future generation from the adverse effects of resource scarcity. The overall impact of these activities enhances the sustainability performance of the organization. Moreover, Dey et al. (2020) revealed that lean management practices (LMP) and sustainability-oriented innovation both help to achieve efficiency and responsiveness respectively in line with stakeholder's satisfaction. Therefore, combined effect of LMP and SOI helps to achieve the sustainability performance. Yildiz Çankaya and Sezen (2019) examined the impact of eight dimensions of supply chain management on sustainability performance. The results demonstrated that except the green purchasing all other seven dimensions of dimensions of supply chain management are found to be related with at least one of the sustainability performance's dimensions.

Despite the arguments around the concepts of ERM implementation and sustainability, it is crucial to create a framework that can offer guidelines and proper direction to adhere the implementation of ERM in the organizations. As stated in the previous existing theories, ERM implementation accelerates firm performance by managing and mitigating the associated risks in a competitive environment. Pertaining to this context, this research work proposes a conceptual framework that consolidates ERM implementation's impact on sustainability performance in government linked company.

The proposed conceptual framework consists of two types of variables, namely the independent variable and the dependent variable, as shown in Figure 3. The independent variable is the principal variable which includes ERM implementation, which will be measured through the COSO framework, whereas the dependent variable is sustainability performance which will be proxied by environmental, social and governance performance. It is proposed that the ERM implementation could positively affect sustainability performance. The detail about the conceptual framework is shown in Figure 3.

Based on conceptual framework, this research work developed the following proposed hypotheses. The development of proposed hypotheses is predicted based on the notion that effective implementation of ERM is beneficial in enhancing economic, environmental, and social performance. The verification of these associations will be tested by the following proposed hypotheses.

H1: The implementation of enterprise risk management will have a positive impact on economic performance in the state government-linked company.

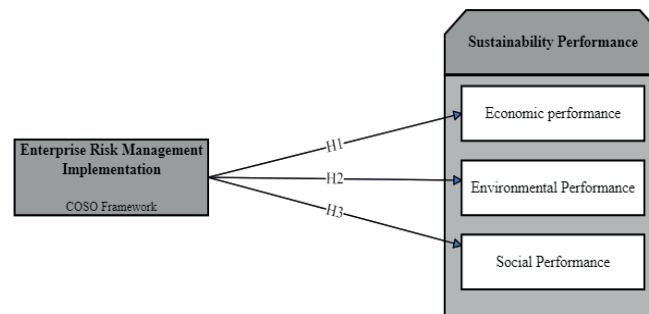


Figure 3: Conceptual Framework Linking Enterprise Risk Management and Sustainability Performance.

H2: The implementation of enterprise risk management will have a positive impact on environmental performance in the state government-linked company.

H3: The implementation of enterprise risk management will have a positive impact on social performance in the state government-linked company.

5. Description of Proposed Methodology

The unit of analysis for this study is 50 employees involved in enterprise risk management (ERM) implementation (risk committee, risk management work group, and top corporate risk working group) of MajuPerak Holdings Berhad as state government-linked company to gain insight about the ERM implementation and sustainability performance. The census method is proposed because the target population of this research study is small. In census method, this study will investigate every unit of the target population to ensure the attainment of utmost accuracy. The census method is recommended by prior literature as the best suited for studies that have individual peoples or companies as unit of analysis. For instance, Shad et al. (2019) proposed the census method to examine the effect of enterprise risk management implementation on the financial performance in Malaysian public listed oil and gas firms.

This study is proposed to focus on primary data from a state government-linked company, which will be collected through a questionnaire incorporating a Five-point Likert scale. The scale which will be designed based on previous studies and conceptual framework shown in Figure 3. The questionnaire items will be validated through pilot test to ensure that the questions are understandable, and respondents can easily complete the survey questions. Finally, the questionnaire will be distributed to all the unit of analysis of sampled company through online and drop-off data collection methods for their responses about ERM implementation and sustainability performance. Regarding

the data analysis, statistical package for social sciences (SPSS) proposed to investigate relationships between constructs and latent variables.

6. Conclusion and Implications of this Study

This study aims to explore the penetration level of enterprise risk management (ERM) implementation and further conceptualizes a framework to explore its effect on sustainability performance including economic, environmental, and social performance. Prior studies have mainly discussed and examined the impact of ERM implementation on financial performance, but the relationship between ERM implementation and non-financial performance particularly sustainability performance has received little attention. This study is underpinned by the stakeholder's theory for supporting the relationship between ERM implementation and sustainability performance. This study proposed that ERM implementation will be proxied by the COSO framework and sustainability performance will be proxied by economic, environmental, and social performance. This research work proposes that the comprehensive implementation of ERM brings a significantly positive impact on sustainability performance. The proposed conceptual framework in this study will have several potential implications.

Firstly, this proposed framework will be helpful to top management in comprehending the effects of an ERM implementation in state government-linked companies. This framework may offer guidance or reference to the state government-linked companies to escalate and recognize the ERM implementation as a crucial conduit to improve sustainability performance. Secondly, this will try to associate the importance of ERM implementation and sustainability performance for responding to the stakeholders on growth prospects. Third, it could assist enterprises in managing the associated uncertainties and risks with sustainability performance which will be in terms of economic, environmental, and social performance. This research work can also be a source of reference to financial analysts, chief sustainability managers, risk managers, industry practitioners, and rating agencies on ERM to enhance sustainability performance.

7. Future Recommendations

Future research can empirically test and validate the proposed conceptual model of this study in various industries and countries. For instance, this study has proposed a conceptual model to be tested in state government-linked companies. However, in future studies, this conceptual framework can be empirically tested in different

territories and with publicly listed companies. It will generalize the framework of the existing study regarding the impact of enterprise risk management (ERM) implementation on sustainability performance. However, this research work proposes a conceptual framework between ERM implementation as an independent variable and sustainability performance as a dependent variable, future studies can be performed by adding a moderator variable between the relationship between ERM implementation and sustainability performance. In this way, the literature will be enriched on the relationship between ERM implementation and sustainability performance with moderating impact. Another direction for future studies, this study will be used the quantitative approach, but future research may consider a mixed method approach to expand the research method approach for this study. To empirically examine this conceptual framework, future studies should contemplate using Structural Equation Modelling (SEM) either Variance-based SEM (PLS) or co-variance-based SEM to help with difficulties related to the design and statistical methodology. Additionally, academicians will be proficient in carrying out research with analysis to determine where potential advancements are needed regarding ERM implementation and sustainability performance.

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