RISK MANAGEMENT, INTERNAL AUDIT FUNCTION, AND CORPORATE PERFORMANCE

Ahmad Saiful Azlin Puteh Salin *, Zubaidah Ismail **, Malcolm Smith ***, Suryani Abdul Raman ****, Norliana Omar ****, Siti Marlia Shamsudin ****

* *Corresponding author,* Faculty of Accountancy, Universiti Teknologi MARA, Perak, Malaysia
Contact details: Faculty of Accountancy, Universiti Teknologi MARA, Perak Branch Tapah Campus, 35400 Perak, Malaysia
** School of Business and Law, Edith Cowan University, Joondalup, Australia
*** School of Commerce, University of South Australia, Adelaide, Australia
**** Faculty of Accountancy, Universiti Teknologi MARA, Perak, Malaysia

How to cite this paper: Salin, A. S. A. P., Ismail, Z., Smith, M., Raman, S. A., Omar, N., & Shamsudin, S. M. (2025). Risk management, internal audit function, and corporate performance. *Risk Governance and Control: Financial Markets & Institutions, 15*(4), 33–42. https://doi.org/10.22495/rgcv15i4p3

ISSN Online: 2077-4303
ISSN Print: 2077-429X

Received: 25.02.2025
Revised: 16.06.2025; 07.07.2025; 07.10.2025
Accepted: 21.10.2025

JEL Classification: G3, M12, M14, M40, M48
DOI: 10.22495/rgcv15i4p3

Abstract

The purpose of this study is to determine the relationship between risk management practices and the internal audit function with the performance of companies. It is interesting to examine how competitive advantage can be achieved when the company is able to face and adapt to a complex business environment via robust risk management practices and an internal audit function. This study uses archival analysis on the annual report of the top 500 publicly listed companies in Bursa Malaysia, which represent approximately 65 percent of the total market capitalization. Both independent variables, namely risk management and internal audit function, are measured based on corporate governance requirements which are issued by the Malaysian authorities, and best practices taken from various international corporate governance recommendations. The results from the multiple regression analysis provides evidence that risk management was significantly positively related with all the performance measurements, supported the earlier findings by Krause and Thse (2016) and Nahar et al. (2016), while there is a mixed findings between the internal audit function and corporate performance. This study is original as it not only examines risk management practices and internal audit function from a local corporate governance perspective but also takes into consideration various recommendations from international best practices.

Keywords: Risk Management, Internal Audit Function, Corporate Governance, Risk, Corporate Performance, Stock Exchange, Listed Companies, Bursa Malaysia

Authors' individual contribution: Conceptualization — A.S.A.P.S. and Z.I.; Methodology — A.S.A.P.S., Z.I., and M.S.; Formal Analysis — A.S.A.P.S., Z.I., and M.S.; Investigation — A.S.A.P.S.; Data Curation — A.S.A.P.S.; Writing — Original Draft — A.S.A.P.S., S.A.R., N.O., and S.M.S.; Writing — Review & Editing — Z.I. and M.S.; Visualization — A.S.A.P.S. and Z.I.; Supervision — Z.I. and M.S.; Project Administration — A.S.A.P.S.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

A sound risk management framework and functional internal audit are two important mechanisms that are needed by organizations to ensure their objectives can be achieved, and at the same time able to prevent any loss to resources and comply with the regulatory requirements. In a world full of uncertainties, it is crucial for the company to have a robust risk management framework and practices so that all the adverse implications from those uncertainties can be minimised and controlled (Committee of Sponsoring Organizations of the Treadway Commission, 2017). At the same time, the company also needs to have an exceptional internal audit function to provide assurance on the good risk management practices (Abdulhussein et al., 2023; Bari et al., 2024; Khikmah et al., 2023; Nguyen et al., 2024). Combined together, risk management and internal audit function are able to ensure risk of the company is managed effectively and responsively towards any sudden change in business environment.

Likewise, good corporate governance, which is also associated with developing sound risk management, assists the risk management framework to take shape and thus leads to high corporate performance (Al Azizah & Haron, 2025; Yang & Lee, 2020). Since the board is responsible in making important decisions, thus, it is necessary to integrate risk management strategy with the overall company strategy and monitor the company's performance against this strategy (Jia & Bradbury, 2020), especially when a company is involved in a complex financial environment. For instance, when a company decides to make an investment decision, many risks need to be considered. Jiang (2023) and Abbot et al. (2024) found that comprehensive risk management enhances business investment efficiency by mitigating both overinvestment and insufficient investments.

According to Ullah et al. (2021), the failure in communicating risk to the top management also contributes to the failure of the risk management and hence, poor accomplishment of the organization. Jia and Bradbury (2020) found that a sound risk management committee structure is needed to ensure effective risk management. Supposedly, when the risks are identified and measured, they need to be informed to the top management so that the appropriate risk management strategies can be made. The top management needs to plan properly on how to mitigate the risks and prepare the contingency plan in the event the risk comes to fruition. Yang and Lee (2020) mentioned that it is a challenge for most companies to enhance their risk management related to internal control system planning and implementation. Therefore, the support from top-level management is needed to ensure the integrity of the internal control system can be implemented (Nawawi & Salin, 2019; Salin et al., 2019; Karim et al., 2018). Moreover, the new risks and existing risks should be monitored, managed, and improved on a continuous basis by internal staff to ensure robust management of risks (Nawawi & Salin, 2018).

The Asian financial turmoil happened in 1997–1998, and the United States subprime mortgage crisis 2007–2009 which later spread to Europe and other countries has proved the urgency of strengthening the risk management in confronting the crisis (Kao et al., 2011). The international financial turmoil has given rise to a global economic recession and financial turmoil, which caused many institutions to go into liquidation. As a result, many companies have closed their business, the stock prices have plunged to half of their values within just a few days after the crisis, and millions of employees have lost their jobs. For example, Kao et al. (2011) have mentioned that the financial holding companies in Taiwan have suffered a lot from the financial crisis, which has later placed greater emphasis on risk management in managing the risks and improving the efficiency in making the policy to make sound financial market decisions during the financial crisis. In more recent development, Yang and Lee (2020) have concurred that as the technology development and business model have become more advanced, the types of threats face by the companies also increasingly change and stiffer from usual.

Based on this situation, it is important for the company to have a systematic risk management and internal audit function so that the great risks can be discovered, evaluated, monitored, and managed on a continuous basis. Moreover, the decision-making process can be made smoothly and confidently by knowing the possible risks. Thus, the purpose of this study is to determine the relationship between risk management practices and the internal audit function with the performance of the company. It is interesting to examine how competitive advantage can be achieved when the company is able to face and adapt to complex business environment via good risk management and internal audit function.

There are several contributions of the study. First, it demonstrates the advantages of risk management and internal audit function as a weapon for timely detection of threats and a strategy for a firm to achieve superior performance not only financially but also non-financially. Second, the outcome of this research reiterates the regulatory bodies and policy makers on the importance of these practices to create value for multiple enterprise stakeholders not only to shareholders but also to other stakeholders at large. Third, this research puts valuable literature into the body of theory on the effectiveness of risk management to enhance the performance of the company, which is scarce. Many prior studies emphasize much on risk strategy, risk compliance, risk reporting, and risk operation.

The structure of this paper is as follows. Section 2 reviews the relevant literature and the development of hypotheses. Section 3 analyses the methodology that has been used to conduct empirical research on risk management and the internal audit function. Section 4 presents the results. Section 5 discusses the research results. Section 6 provides the conclusion and suggestions for future research.

2. LITERATURE REVIEW AND HYPHOTHESES DEVELOPMENT

2.1. The importance of risk management

Risk management can be described as the procedure of recognising, evaluating, and mitigating hazards to an organisation's capital and earnings. Risk management is essential as preventive actions can be taken to reduce the probabilities of threats (Ullah et al., 2021). Risk managements help the company to

assess the business risks and manage them accordingly so that the business objectives can be achieved (Jia & Bradbury, 2020) and facilitate the organisation in attaining financially viable performance (Hristov et al., 2024). Scopel et al. (2025) find that appropriate risk management can enhance the societal function of firms.

In business, there are always risks involved, and some of them are unexpected and can badly affect the company, while some of the risks are also worth taking. Thus, the ultimate objective of risk management is to identify potential risks that could negatively affect the company financially, operationally, and legally. The effective risk management strategy allows the company to be prepared for the unexpected threats, can quickly respond to the risks, minimize the company's losses, and maximize the good opportunities, which can increase the corporate performance (Jermias et al., 2023). The stability in managing the business operation can be achieved when secure work environment can be created. A good risk management plan could also bring a positive image as the stakeholders perceive that the business is conducted in a professional and proactive way, and increase the employees' morale (Yang & Lee, 2020).

The pandemic of COVID-19 is an example of an unprecedented crisis that has affected all countries in the world (Jaziri & Miralam, 2021). This crisis has proven that we live in a complex and uncertain situation, as it has severely affected the economy when most governments in the world have been forced to close down economic activities, impose border closures and trade restrictions. From the business perspective, the pandemic has shown significant external risks that have led to stimulate the new thinking. Paul et al. (2021) have documented that the pandemic has disrupted the fragility of the global supply chain from raw materials, production, and transportation. Therefore, the businesses have been forced to formulate the appropriate strategies to ensure their survival (Hohenstein, 2022). Thus, to adapt to the pandemic, companies have needed to shift their risk management strategy towards business digital automation to mitigate any operational and compliance risks. Many companies have taken the strategy to optimise the technologies to improve their productivity, communication, and collaborations as part of their crisis management plan during the pandemic. This has been an essential approach for businesses to continuously monitor and achieve the company's objective by focusing on how to turn the threat into an opportunity, even in the post-pandemic crisis. For instance, the pandemic has expedited the assimilation of technological advancements in retailing for the consumer, which has now become the new normal, while digitalisation of the retail system is a way of a company's survival.

2.2. The benefits of the internal audit function

The internal audit generally plays an important role for management, the audit committee, the board of directors, and other stakeholders in an organization. According to Chen et al. (2020) internal audit function is proven to be one of the integral mechanisms of sound corporate governance, which supports organizations to perform better, ensure obedience with laws, rules, regulations, policies, and procedures. Besides creating added value, the internal audit function offers expertise and assistance to the leadership of an organization, which facilitates leaders to be effective and efficient in performing managerial duties (Alias et al., 2019; Petraşcu & Tieanu, 2014) and better reporting quality (Al-Qadasi et al., 2025)

With the internal auditors that are well trained, the internal audit function might assume a pivotal function in assisting companies in addressing the deficiencies, scandals, and limits earnings management (Ege et al., 2022). The importance of the internal audit role has escalated to mitigate dishonest and inaccurate financial reporting, as well as to discover and avoid material flaws (Prawitt et al., 2012), enhancing the internal control framework, reducing fraud risk, and providing independent consultation for decision-making (Dzikrullah et al., 2020). In addition, the internal audit function is able to assess efficient utilisation of financial resources within companies and government agencies (Shariman et al., 2018) that will result in cost savings and could help them to improve oversight and financial performance. Internal audit function too can act as an effective driver in governance structure to enhance the standard of financial information and restore investors' trust in financial statements (Al-Shetwi et al., 2011).

2.3. Hypotheses development

Decent risk management is crucial to safeguard the company when something goes wrong. While risk is inherently unpredictable, neglecting to recognise and address risk responses within an organisation can have adverse consequences (Callahan & Soileau, 2017). Companies with lower risk have a lower cost of capital and less financial distress (Stulz, 1996). With sufficient risk management, a company can change its capital ratio from equity-based to debt-based financing because the company is perceived as less risky by credit providers and thus, it is able to take advantage of tax planning (Orlitzky & Benjamin, 2001; Sharfman & Fernando, 2008). Many investors, both institutional and retail investors, also consider a company's risk factors when deciding major investment decisions (Heinkel et al., 2001; Mackey et al., 2007) and are prepared to tolerate diminished risk premiums on equity. All of these (higher debt financing and lower premium on equity financing) will enhance a company's profitability.

Besides that, there is also emerging support for the claim that the firms are capable to enhance their operation by employing a comprehensive assessment of risk in managing organisational risk, such as practising enterprise risk management (Gordon et al., 2009; Hoyt & Liebenberg, 2011; Nahar et al., 2016). Rehman and Anwar (2019), for example, found that companies with a distinctive business strategy advocate for formal risk management techniques, which subsequently enhance market performance. This is because a robust risk management framework will protect the company from various types of risks, strategically and operationally, and increase the company's competitive advantage. Risk detection, for example, is crucial for both deliberate and unintentional disruptions in the supply chain locally and internationally (DuHadway et al., 2019; Sturm et al., 2022). This will reduce the possible shortage of supply and hence, ensure its sustainable

performance (Gordon et al., 2009) and economic value added (Shad et al., 2019). On the other hand, Durst et al. (2019) found that information risk management positively influences organisational success, sustainability, expansion, inventiveness, and flexibility.

Therefore, the first hypothesis is suggested as follows:

H1: There is a positive relationship between a sound risk management framework and corporate performance.

Knowledge, skills, and expertise developed by the internal auditor for specific business areas and particular industries will contribute to cost savings and reduction in dollar invested for operational audits (Adams, 1994) and lower risk profile of the company (Lindow & Race, 2002). Due to this, modern beliefs of the internal audit function have shifted from concentrating on compliance only to providing consultancy and value-added services to the company (Mihret & Woldeyohannis, 2008)

Internal audit can first discover and overcome any shortcomings before it will materially affect the revenue and profit figures of the company. This can be accomplished when the internal audit is efficiently and effectively functioning and practising. An excellent system of internal audit is important to ensure that capital is not wasted (Abuazza et al., 2015). From the financial viewpoint, internal audit will avert the company from nonessential losses due to vulnerability to preventable financial risks. Besides, internal audit is able to strengthen internal control and hence, prevent and detect fraud and misappropriation of assets (Abidin et al., 2019; Turnbull Review Group, 2005).

Search in the literature also documented findings that internal audit is related to a decrease in the activities of earnings manipulations (Prawitt et al., 2009; Alzoubi, 2019; Ghaleb et al., 2020), while Al-Rassas and Kamardin (2016) found that investment in the internal audit function is associated with better earnings quality. Verschoor (1998) also found that there is a positive relationship between a company that emphasises strict control and corporate performance, while Baatwah et al. (2019) suggested a significant interaction between the external auditor and internal audit function in association with audit efficiency. In the banking sector, Sulub et al. (2020) found that the task of internal auditing is likely to be employed by lenders that exhibit greater accountability and transparency.

The subsequent hypothesis is:

H2: There is a positive relationship between the internal audit function and corporate performance.

2.4. Theoretical framework: Stewardship theory

This research used stewardship theory (Donaldson, 1990) to explain the stewardship behaviour of managers in the organization, resulting in exemplary corporate governance practices. In this theory, managers have a similar interest and consistent objective with the firm's objective. As a steward of the firm, the managers fundamentally aim to perform effectively and responsibly manage the resources of the company. Hence, the managers will seek to maximise the organisational performance and shareholder returns, which in return will fulfil their aspiration and inner motivation (Donaldson & Davis, 1991). As a result, the managers will execute any guidelines that will ensure the efficacy and efficiency of the operation of the company. In the context of this research, the manager will operate solid risk management practices and an internal audit function, which contribute to the superior accomplishment of the company.

Unlike agency theory, which views managers as self-interested agents requiring constant monitoring, stewardship theory suggests that managers are intrinsically reliable and driven to pursue the optimal long-term objectives of the organisation and its various constituents. While agency theory offers a valuable framework for identifying potential conflicts of interest and designing basic governance structures, its core assumptions about human nature and motivation are often seen as overly cynical and limited. Stewardship theory offers a more optimistic and potentially more effective approach by recognizing the intrinsic motivations of managers and fostering an environment of trust, empowerment, and collective responsibility.

3. RESEARCH METHODOLOGY

3.1. Sample

This study's sample comprises the largest 500 companies by valuation as of 31 December listed on the Bursa Malaysia Stock Exchange, representing roughly 65 percent of the overall population. These companies were chosen due to their significant valuation by investors, extensive shareholder base, and elevated number of shareholders. However, there were certain groups of companies that were removed from the study based on certain reasons as shown in Table 1. The final sample of this study comprised of 437 companies.

Table 1. Sample selection

Sample selection process	*No. of firms*	*Reasons*
Initial samples	500	
Less than the following companies:		
Finance	33	Distinct legal frameworks and regulations, accompanied by distinct accounting and commercial practices.
Newly listed companies	5	Annual statements are unavailable for data collection.
Delisted	7	
Companies with FYE more/less than 12 months	17	Financial performances are not equivalent to those of other companies (12-month period).
PN17	1	Under stringent oversight and organisational reconfiguration of the regulatory authority.
Final sample	**437**	

Note: FYE — fiscal year end, PN17 — Practice Note 17, a classification used by Bursa Malaysia Stock Exchange, to identify listed companies facing significant financial difficulties.

3.2. Dependent variable

The dependent variable for this study is corporate performance, measured by seven items. The explanations of all the measurements with the prior empirical research are given in Table 2.

Table 2. Measurements of the dependent variable

Measurement	*Equation*	*Source*
Return on equity (ROE)	$\frac{Income\ before\ extraordinary\ items\ available\ for\ common\ equity}{Average\ total\ common\ equity\ (the\ average\ for\ the\ current\ and\ the\ previous\ fiscal\ year)}$	Gompers et al. (2003)
Return on assets (ROA)	$\frac{Income\ before\ extraordinary\ items\ is\ available\ for\ common\ equity}{Average\ total\ assets}$	Bhagat and Bolton (2008), Mitton (2004)
Net profit margin (NP)	$\frac{Income\ before\ extraordinary\ items\ available\ for\ common\ equity}{Net\ sales}$	Gompers et al. (2003)
Tobin's Q	$\frac{Market\ value\ of\ assets}{Book\ value\ of\ assets}$ $Book\ value\ assets + Market\ value\ of\ the\ common\ stock - Book\ value\ of\ the\ common\ stock$	Gompers et al. (2003), Bhagat and Bolton (2008)
Market-to-book ratio (MTB)	$\frac{Market\ capitalisation}{Book\ value\ of\ firm\ assets}$	Gompers et al. (2003), Donker et al. (2008)
Dividend payout ratio	$\frac{Total\ dividend}{Total\ assets}$	Jagannathan et al. (2000)
	$\frac{Total\ dividend}{Net\ income}$	Farinha (2003)

Source: Authors' elaboration.

3.3. Independent variables

The independent variable of this study is *risk management* and the *internal audit function*. The measurement of these variables is based on corporate governance requirements that issued by the Malaysian authorities and best practices taken from various international corporate governance reports, such as from Australia, Canada, Norway, South Korea, Singapore, Sweden, Turkey, UK and US. Overall, 10 items were constructed to evaluate the *risk management* practices and eight for *internal audit function*. To evaluate theses variables, an instrument was created based on a 3-point Likert scale. "2" denotes more disclosure of information given by the company, "1" shows company only provide minimal information while "0" score shows the company does not give information at all. To eliminate discretion and prejudice, all elements will be seen as equally significant and, hence, assigned equal weight (Barros et al., 2013).

The initial assessment was validated and evaluated by a group of specialists, including academics with diverse industrial backgrounds in corporate ethics and governance, to improve its construct validity. Following the receipt of responses and input, the definitive version of this tool was employed for this investigation. A pilot study was subsequently undertaken to evaluate the instrument's viability.

3.4. Control variables

Additional factors that may affect the outcomes of the study are referred to as control variables. The control variables in this study are *company size*, *leverage* and *age*. The equation and the empirical source of this measurement is shown in Table 3.

Table 3. Description of the control variables

Measurement	*Equation*	*Source*
Company size	$log\ total\ assets$	Bebchuk et al. (2009), Mitton (2004)
Company leverage	$\frac{Total\ liabilities}{Total\ assets}$ $Long - term\ debt + Current\ portion\ of\ long - term\ debt$	Bhagat and Bolton (2008), Bebchuk et al. (2009)
Company age	$Years\ since\ incorporation$	Bebchuk et al. (2009)

Source: Authors' elaboration.

3.5. Model specification

In evaluating the hypothesis, the regression model is as follows:

$$PERF = RM + IAF + Size + Lev + Age + \varepsilon \quad (1)$$

where, *PERF* = performance, *RM* = risk management, *IAF* = internal audit function, *Size* = size of the company, *Lev* = leverage, *Age* = years since incorporation, and ε = error term.

This study assessed multicollinearity through correlation matrices, variance inflation factors (VIF), and tolerance values of collinearity statistics. Our analysis indicated that multicollinearity was absent in this sample.

3.6. Alternative methods

A widely favoured alternative approach for performing this kind of research is to administer a survey to the firms. A survey instrument may be created by assembling many questions that assess all the relevant variables. One may use appropriate statistical analysis, such as structural equation modelling, to examine the link between independent and dependent variables. Nevertheless, the primary drawback of this approach is the relatively low response rate, which may be attributed to factors such as respondents' concerns about anonymity, their busy schedules, and a lack of enthusiasm in engaging in research.

4. FINDINGS AND RESULTS

4.1. Descriptive statistics

The study's descriptive findings are shown in Table 4.

Table 4 presents the mean outcomes of the independent variables, indicating that the average scores attained by the organisations for risk management were 9.9 in 2013 and 10.4 in 2014, which constitutes around 50% of the total scores designated for this practice. The minimum score was zero in 2013 and one in 2014, while the maximum score was 19 in 2013 and grew marginally to 20 in 2014. The average score for the internal audit function was 6.1 in both years. The minimum score was zero in both years, while the maximum scores were 16 in 2013 and 13 in 2014, respectively.

This study utilises five dependent variables: *ROE, ROA, NP, MTB*, and *Tobin's Q. ROE*, *ROA*, and *NP* were utilised to assess the company's success through its accounting profit, whilst *MTB* and *Tobin's Q* are predicated on the company's market valuation.

Table 4. Descriptive statistics

Var.	No.	2013					2014				
		Min.	Max.	Mean	Median	Std. dev.	Min.	Max.	Mean	Median	Std. dev.
RM	437	0	19	9.88	10.00	2.683	1	20	10.38	10.00	3.524
IAF	437	0	16	6.06	6.00	2.336	0	13	6.12	6.00	1.859
ROE	437	-0.6950	1.6580	0.1056	0.0920	0.1715	-1.2930	12.8330	0.1393	0.0880	0.7221
ROA	437	-0.3890	0.5910	0.0610	0.0540	0.07903	-0.3260	6.3380	0.0702	0.0500	0.3101
NP	437	-3.4030	7.9480	0.1501	0.0900	0.6362	-1.8200	90.303	0.3294	0.0850	4.3450
Tobin's Q	437	-0.4400	14.3540	1.6949	1.3550	1.3014	-12.5035	11.1836	1.0491	1.1510	1.9197
MTB	437	0.0260	13.4590	0.9920	0.6290	1.2773	0.0190	14.7720	0.9064	0.5388	1.3116
Size	437	4.6392	7.9957	5.9290	5.8461	0.5838	4.7367	8.0440	5.9731	5.8815	0.5814
Lev	437	0.0000	0.6429	0.1255	0.0879	0.1363	0.0000	0.6070	0.1280	0.0836	0.1387
Age	437	1.0000	41.0000	17.3157	18.000	8.5236	2.0000	43.0000	18.8352	19.00	8.6668

Note: RM = risk management, IAF = internal audit function, ROE = return on equity, ROA = return on assets, NP = net profit margin, MTB = market to book value, Size = size of the company, Lev = leverage, Age = years since incorporation.

The average *ROE* rose marginally from 10.56% in 2013 to 13.93% in 2014. The maximum value diminished from 165.8% in 2013 to 128.33% in 2014, whereas the minimum value declined from -69.5% in 2013 to -129.3% in 2014. The average *ROA* rose from 6.1% in 2013 to 7.0% in 2014. The maximum value rose from 59.1% in 2013 to 63.38% in 2014. The lowest value rose from -38.9% in 2013 to -32.6% in 2014. The final measurement in the accounting profit category, *NP*, likewise rose. The average value of 15.01% in 2013 increased to 32.94% in 2014, effectively doubling it. The maximum value significantly rose from 794.8% in 2013 to 9,030.3% in 2014, while the minimum value increased from -340.3% in 2013 to -182.0% in 2014.

For the *MTB* and *Tobin's Q* metrics, most companies had values approaching 1 for *MTB* and beyond 1 for *Tobin's Q,* signifying that their market value and share price were equivalent to or surpassed their replacement cost or book value of assets. In 2013, the *Tobin's Q* ratio was 1.6949. Despite declining to 1.0491 in 2014, the ratio remained over 1. The peak values were 14.354 in 2013 and 11.1836 in 2014, whereas the lowest values were -0.44 in 2013 and -12.5035 in 2014. For *MTB*, the maximum values were 13.459 in 2013 and 14.772 in 2014, while the smallest values were 0.026 in 2013 and 0.019 in 2014.

The control variables exhibited relative stability from 2013 to 2014. The mean total assets for both years were roughly 6.0, with a range of from 4.5 to 8.0. The company's average duration in operation was 18 years, with a low of approximately 1 year and a maximum of 40 years. The leverage ratio was very low, averaging around 13%. The peak leverage levels documented were 65% in 2013 and 60% in 2014, respectively.

4.2. Regression and hypotheses analysis

Table 5 shows the multiple regression results of the study. This study hypothesized a positive relationship between risk management and corporate results, because a company, that developed a risk management framework to properly manage its risk, will be able to prevent or at least minimise company losses and any adverse impacts from the financial and non-financial factors on the company.

Table 5. Multiple regression results (Part 1)

Var.	ROE						ROA					
	2013			2014			2013			2014		
	R = 0.174 R² = 0.030 Adjusted R² = 0.019 F-value = 2.697 Sig. F = 0.021			R = 0.145 R² = 0.021 Adjusted R² = 0.010 F-value = 1.843 Sig. F = 0.103			R = 0.282 R² = 0.080 Adjusted R² = 0.069 F-value = 7.470 Sig. F = 0.000			R = 0.199 R² = 0.040 Adjusted R² = 028 F-value = 3.557 Sig. F = 0.004		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Constant	-0.0.11	0.091		-0.520	0.300		0.039	0.041	-0.121	-0.307	0.325	
RM	0.006	0.003	0.094*	0.012	0.009	0.075	0.003	0.002	0.086*	0.013	0.009	0.076
IAF	-0.008	0.004	-0.111**	0.028	0.016	0.095*	-0.003	0.002	-0.092*	0.025	0.017	0.076
Size	0.027	0.016	0.90	-0.135	0.058	-0.142**	0.009	0.007	0.068	-0.197	0.063	-0.190***
Lev	-0.146	0.067	-0.116**	0.290	0.216	0.073	-0.145	0.030	-0.251***	-0.280	0.234	-0.064
Age	-0.002	0.001	-0.094*	0.002	0.003	0.027	-0.001	0.000	-0.126***	0.003	0.003	0.043

Table 5. Multiple regression results (Part 2)

Var.	*Tobin' Q*						*MTB*					
	2013			*2014*			*2013*			*2014*		
	R = 0.236 R² = 0.056 Adjusted R² = 0.045 F-value = 5.087 Sig. F = 0.000			R = 0.205 R² = 0.042 Adjusted R² = 0.031 F-value = 3.783 Sig. F = 0.002			R = 0.251 R² = 0.063 Adjusted R² = 0.052 F-value = 5.796 Sig. F = 0.000			R = 0.373 R² = 0.139 Adjusted R² = 0.129 F-value = 13.953 Sig. F = 0.000		
	B	***SE B***	***β***	***B***	***SE B***	***β***	***B***	***SE B***	***β***	***B***	***SE B***	***β***
Constant	-0.091	0.110		-2.095	1.031		1.043	0.229		0.234	0.189	
RM	0.001	0.004	0.007	0.051	0.029	0.094*	0.004	0.009	0.026	0.018	0.005	0.172**
IAF	0.006	0.005	0.070	0.006	0.055	0.006	0.009	0.010	0.047	0.033	0.010	0.164**
Size	0.054	0.020	0.150***	0.513	0.201	0.155**	-0.009	0.041	-0.012	-0.122	0.037	-0.191**
Lev	-0.289	0.080	-0.188***	-0.780	0.743	-0.056	-0.702	0.167	-0.218***	-0.633	0.136	-0.237***
Age	-0.004	0.001	-0.156***	-0.021	0.011	-0.093*	-0.006	0.002	-0.0114**	-0.002	0.002	-0.047

*Note: Statistically significant at: * 0.10, ** 0.05, and *** 0.01. VIF is less than 10, and tolerance for collinearity is more than 0.1 for all variables. ROE = return on equity, ROA = return on assets, MTB = market-to-book value, RM = risk management, IAF = internal audit function, Size = size of the company, Lev = leverage, Age = years since incorporation.*

Table 5 provides evidence that the risk management variable was significantly positively related to all the performance measurements, although not in all years. Hence, the study accepted its earlier hypothesis, *H1* (*ROE*: 2013 — $\beta = 0.094$, $p < 0.1$; 2014 — $\beta = 0.075$, $p > 0.1$; *ROA*: 2013 — $\beta = 0.086$, $p < 0.1$; 2014 — $\beta = 0.076$, $p > 0.1$; *Tobin's Q*: 2013 — $\beta = 0.007$, $p > 0.1$; 2014 — $\beta = 0.094$, $p < 0.1$; *MTB*: 2013 — $\beta = 0.026$, $p > 0.1$; 2014 — $\beta = 0.172$, $p < 0.05$).

The other variable of interest in this study is *internal audit*. The internal audit function is important, not only to ensure that the company follows the regulations, but also to advise the management of the company to strengthen the effectiveness and efficiency of its operation, which will result in cost savings, safeguarded assets, and prevent fraud and mismanagement. It was predicted that the internal audit function would improve corporate performance. Table 5 shows that there are mixed findings between the internal audit function and corporate performance. There is a significant positive relationship in 2014 for *ROE* ($\beta = 0.095$, $p < 0.1$) and MTB ($\beta = 0.164$, $p < 0.005$), but a significant negative relationship in 2013 for *ROE* ($\beta = -0.111$, $p < 0.05$) and *ROA* ($\beta = -0.092$, $p < 0.1$). For the rest of the years and Tobin's Q, no relationship was recorded (*ROA*: 2014 — $\beta = 0.076$, $p > 0.1$; *MTB*: 2013 — $\beta = 0.047$, $p > 0.1$; *Tobin's Q*: 2013 — $\beta = 0.007$, $p > 0.1$; 2014 — $\beta = 0.006$, $p > 0.1$). Based on this outcome, this hypothesis is rejected.

5. DISCUSSION

This study identified a favourable relationship between risk management and company performance. The reasons that can justify this positive relationship are possibly although the risk management requirements are quite new for the Malaysian listed companies, the acceptance of the company to adopt good risk management practices documented clear benefits that can lead to a better performance by the company. This finding supported the earlier findings by Gordon et al. (2009), Hoyt and Liebenberg (2011), Hutchinson et al. (2015), Krause and Thse (2016), Nahar et al. (2016), but contradicts with Amran et al. (2008) and Ismail and Rahman (2011), which documented many weaknesses in the risk management activities of Malaysian large corporations. Possibly, these studies were conducted at the time when the risk management practices in Malaysia were still at the infancy stage and very much less than the companies in the UK. Our study, however conducted at the time when the companies are more matured and able to see the advantage of managing risk and uncertainty early in advance.

However, this study documented evidence of no or weak association between the internal audit function and corporate achievement. It was an unexpected result that indicated that the higher the role played by the internal audit function, no contribution to the better performance of the firm. Unusually, in some years, the internal oversight role is directed to lower corporate performance. This finding does not support prior empirical results by Prawitt et al. (2009), Alzoubi (2019), Ghaleb et al. (2020), Al-Rassas and Kamardin (2016), and Verschoor (1998).

The possible reason for this result is the fact that the internal audit function is seen as complementary instead of compulsory or highly weighted as important by the majority of companies in Malaysia. Bigger companies had more resources and therefore, may invest in a dedicated internal audit unit or department. Small firms that were generally associated with low performance are generally lack of fund and hence, maybe just outsource the internal audit function to small accounting firms or consultants just for formality to fulfill the requirements of corporate governance guidelines instead of considering internal audit function as an important governance process that provide independent assurance of organization's internal control and improve organization's operation.

In addition, a highly visible and seemingly pervasive internal audit function focused on compliance and control could be seen as a lack of trust from the board or shareholders. Consequently, it could stifle innovation, creativity, and calculated risks that can lead to company growth. Instead of focusing on innovative strategies and long-term value creation, they might become overly focused on meeting audit requirements, leading to a "check-the-box" mentality rather than genuine improvement.

6. CONCLUSION

The aim of this research is to investigate the role of risk management activities and the internal audit function towards a company's corporate performance. This study finds that risk management was significantly positively related to performance. Nonetheless, there exists no substantial positive correlation between the internal audit function and business performance. Previous literature has revealed numerous advantages that can be obtained

by the company by having these two practices and functions. This study supported the prior literature on the gain of having risk management practices but not the internal audit function.

The research in question presents multiple significances. First, the company needs to view risk management and the internal audit function as a significant aspect of the integrity process in their organization. Robust risk management is important because it will prevent the company from any unexpected loss that will erase the profit of the company. It is expected that by having a proper risk management and internal audit function, the company will be capable to assess better alternative at the earliest possible period and improve its efficiency and effectiveness.

Second, the policy makers need to increase their effort in promoting a good governance culture, especially the internal audit function, to the public listed companies generally and the directors, particularly. More training and explanation are needed to outline the advantageous effects of maintaining an effective internal audit function, such as improving business operational quality, increasing efficiency, cost reduction, enhancement of policy and procedure, and better regulatory compliance. In contrast, an absent or minimal internal audit function may expose the company to hidden transaction errors, process redundancies, fraud, unnecessary risks, wastage, and violation of rules and regulations.

Finally, this study supported the classic stewardship theory, which anticipates that sustainable performance can be achieved if the objective of the firm is aligned with the objective of the manager firm. This is correct for the risk management, but not the internal audit function. Further examination needs to be conducted on why, in this study internal audit function was unable to confirm its prediction and hypothesis.

This study has several limitations that provide the opportunity for future study. This study is limited only to 500 biggest firms in Malaysian public listed companies by market capitalisation. Future studies should increase the sample size, so that better accurate results can be analyzed. In addition, the study's bias towards large organizations can be removed. Besides, the study period can be extended for more longer period, so that a detailed examination can be implemented to get more convincing results. Moreover, this study does not employ robustness checks to validate the regression findings. Thus, additional robustness analysis, such as a comparative study of large and small firms, and an analysis that excludes high-leverage firms, can be conducted to obtain a more solid and sound conclusion. Additionally, other statistical analyses can be employed to exploit within-firm variation. This study also only collects data from the publicly available financial statement of the company. It is recommended that for future study, other data collection methods like surveys and focus expert interviews can be applied. This is useful especially for the researcher to get richer data which cannot be extracted from the annual reports and other public domains such as company websites and stock exchange announcements.

REFERENCES

Abbott, L. J., Barr-Pulliam, D., Buslepp, W. L., & Parker, S. (2024). The real effects of internal audit function quality: Evidence from investment strategies. *Journal of Accounting, Auditing & Finance, 39*(2), 540–567. https://doi.org/10.1177/0148558X211069218

Abbott, L. J., Parker, S., Peters, G. F., & Rama, D. V. (2007). Corporate governance, audit quality, and the Sarbanes-Oxley Act: Evidence from internal audit outsourcing. *The Accounting Review, 82*(4), 803–835. https://doi.org/10.2308/accr.2007.82.4.803

Abdulhussein, A. S., Al-Refiay, H. A. N., & Wahhab, A. M. A. (2023). The impact of internal auditing on corruption: Evidence from the emerging market [Special issue]. *Journal of Governance & Regulation, 12*(1), 367–375. https://doi.org/10.22495/jgrv12i1siart15

Abidin, M. A. Z., Nawawi, A., & Salin, A. S. A. P. (2019). Customer data security and theft: A Malaysian organization's experience. *Information & Computer Security, 27*(1), 81–100. https://doi.org/10.1108/ICS-04-2018-0043

Abuazza, W. O., Mihret, D. G., James, K., & Best, P. (2015). The perceived scope of internal audit function in Libyan public enterprises. *Managerial Auditing Journal, 30*(6–7), 560–581. https://doi.org/10.1108/MAJ-10-2014-1109

Adams, M. B. (1994). Agency theory and the internal audit. *Managerial Auditing Journal, 9*(8), 8–12. https://doi.org/10.1108/02686909410071133

Al Azizah, U. S., & Haron, R. (2025). Unveiling the nexus: Corporate governance practices and corporate financial performance of an Islamic banking. *Business Performance Review, 3*(1), 37–47. https://doi.org/10.22495/bprv3i1p4

Alias, N. F., Nawawi, A., & Salin, A. S. A. P. (2019). Internal auditor's compliance to code of ethics: Empirical findings from Malaysian Government-linked companies. *Journal of Financial Crime, 26*(1), 179–194. https://doi.org/10.1108/JFC-07-2017-0066

Al-Rassas, A. H., & Kamardin, H. (2016). Earnings quality and audit attributes in high concentrated ownership market. *Corporate Governance: The International Journal of Business in Society, 16*(2), 377–399. https://doi.org/10.1108/CG-08-2015-0110

Al-Shetwi, M., Ramadili, S. M., Chowdury, T. H. S., & Sori, Z. M. (2011). Impact of internal audit function (IAF) on financial reporting quality (FRQ): Evidence from Saudi Arabia. *African Journal of Business Management, 5*(27), 11189–11198. https://www.researchgate.net/publication/267828328

Al-Qadasi, A. A., Ghaleb, B. A., & Qaderi, S. A. (2025). Unlocking the power of internal audit function (IAF) and corporate social responsibility (CSR): Enhancing integrated reporting quality in Malaysian companies. *Managerial Auditing Journal, 40*(1), 1–29. https://doi.org/10.1108/MAJ-02-2024-4236

Alzoubi, E. S. S. (2019). Audit committee, internal audit function and earnings management: Evidence from Jordan. *Meditari Accountancy Research, 27*(1), 72–90. https://doi.org/10.1108/MEDAR-06-2017-0160

Amran, A., Bin, A. M. R., & Che Haat, M. H. (2008). Risk reporting: An exploratory study on risk management disclosure in Malaysian annual reports. *Managerial Auditing Journal, 24*(1), 39–57. https://doi.org/10.1108/02686900910919893

Baatwah, S. R., Al-Ebel, A. M., & Amrah, M. R. (2019). Is the type of outsourced internal audit function provider associated with audit efficiency? Empirical evidence from Oman. *International Journal of Auditing, 23*(3), 424–443. https://doi.org/10.1111/ijau.12170

Bari, A. H. A., Abed, R. A., Kahdim, R. M., Hasan, H. F., Sharaf, H. K., & Alwan, A. S. (2024). The role of internal auditing in corruption control and enhancing corporate governance: A board of directors' outlook. *Corporate Board: Role, Duties and Composition, 20*(2), 120–127. https://doi.org/10.22495/cbv20i2art12

Barros, C. P., Boubaker, S., & Hamrouni, A. (2013). Corporate governance and voluntary disclosure in France. *Journal of Applied Business Research, 29*(2), 561–578. https://doi.org/10.19030/jabr.v29i2.7657

Bebchuk, L. A., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance? *Review of Financial Studies, 22*(2), 783–827. https://doi.org/10.1093/rfs/hhn099

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate Finance, 14*(3), 257–273. https://doi.org/10.1016/j.jcorpfin.2008.03.006

Callahan, C., & Soileau, J. (2017). Does enterprise risk management enhance operating performance? *Advances in Accounting, 37*, 122–139. https://doi.org/10.1016/j.adiac.2017.01.001

Chen, Y., Lin, B., Lu, L., & Zhou, G. (2020). Can internal audit functions improve firm operational efficiency? Evidence from China. *Managerial Auditing Journal, 35*(8), 1167–1188. https://doi.org/10.1108/MAJ-01-2019-2136

Committee of Sponsoring Organisations of the Treadway Commission. (2017). *Enterprise risk management — Integrating with strategy and performance: Executive summary.* https://www.coso.org/_files/ugd/3059fc_61ea5985b03c4293960642fdce408eaa.pdf

Donaldson, L. (1990). The ethereal hand: Organizational economics and management theory. *Academy of Management Review, 15*(3), 369–381. https://doi.org/10.2307/258013

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management, 16*(1), 49–64. https://doi.org/10.1177/031289629101600103

Donker, H., Poff, D., & Zahir, S. (2008). Corporate values, codes of ethics, and firm performance: A look at the Canadian context. *Journal of Business Ethics, 82*(3), 527–537. https://doi.org/10.1007/s10551-007-9579-x

DuHadway, S., Carnovale, S., Hazen, B. (2019). Understanding risk management for intentional supply chain disruptions: Risk detection, risk mitigation, and risk recovery. *Annals of Operations Research, 283*(1), 179–198. https://doi.org/10.1007/s10479-017-2452-0

Durst, S., Hinteregger, C., & Zieba, M. (2019). The linkage between knowledge risk management and organizational performance. *Journal of Business Research, 105*, 1–10. https://doi.org/10.1016/j.jbusres.2019.08.002

Dzikrullah, A. D., Harymawan, I., & Ratri, M. C. (2020). Internal audit functions and audit outcomes: Evidence from Indonesia. *Cogent Business & Management, 7*(1), 1–21. https://doi.org/10.1080/23311975.2020.1750331

Ege, M., Seidel, T. A., Sterin, M., & Wood, D. A. (2022). The influence of management's internal audit experience on earnings management. *Contemporary Accounting Research, 39*(3), 1834–1870. https://doi.org/10.1111/1911-3846.12770

Farinha, J. (2003). Dividend policy, corporate governance and the managerial entrenchment hypothesis: An empirical analysis. *Journal of Business Finance & Accounting, 30*(9–10), 1173–1209. https://doi.org/10.1111/j.0306-686X.2003.05624.x

Ghaleb, B. A. A., Kamardin, H., & Al-Qadasi, A. A. (2020). Internal audit function and real earnings management practices in an emerging market. *Meditari Accountancy Research, 28*(6), 1209–1230. https://doi.org/10.1108/MEDAR-02-2020-0713

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *The Quarterly Journal of Economics, 118*(1), 107–156. https://doi.org/10.1162/00335530360535162

Gordon, L. A., Loeb, M. P., & Tseng, C. Y. (2009). Enterprise risk management and firm performance: A contingency perspective. *Journal of Accounting and Public Policy, 28*(4), 301–327. https://doi.org/10.1016/j.jaccpubpol.2009.06.006

Heinkel, R., Kraus, A., & Zechner, J. (2001). The effect of green investment on corporate behavior. *Journal of Financial and Quantitative Analysis, 36*(4), 431–449. https://doi.org/10.2307/2676219

Hohenstein, N. O. (2022). Supply chain risk management in the COVID-19 pandemic: Strategies and empirical lessons for improving global logistics service providers' performance. *The International Journal of Logistics Management, 33*(4), 1336–1365. https://doi.org/10.1108/IJLM-02-2021-0109

Hoyt, R. E., & Liebenberg, A. P. (2011). The value of enterprise risk management. *Journal of Risk and Insurance, 78*(4), 795–822. https://doi.org/10.1111/j.1539-6975.2011.01413.x

Hristov, I., Camilli, R., Chirico, A., & Mechelli, A. (2024). The integration between enterprise risk management and performance management system: Managerial analysis and conceptual model to support strategic decision-making process. *Production Planning & Control, 35*(8), 842–855. https://doi.org/10.1080/09537287.2022.2140086

Hutchinson, M., Seamer, M., & Chapple, L. E. (2015). Institutional investors, risk/performance and corporate governance. *The International Journal of Accounting, 50*(1), 31–52. https://doi.org/10.1016/j.intacc.2014.12.004

Ismail, R., & Rahman, R. A. (2011). Institutional investors and board of directors' monitoring role on risk management disclosure level in Malaysia. *IUP Journal of Corporate Governance, 10*(2), 37–61. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1984598

Jagannathan, M., Stephens, C. P., & Weisbach, M. S. (2000). Financial flexibility and the choice between dividends and stock repurchases. *Journal of Financial Economics, 57*(3), 355–384. https://doi.org/10.1016/S0304-405X(00)00061-1

Jaziri, R., & Miralam, M. S. (2021). The impacts of crisis and disasters risk management in COVID-19 times: Insights and lessons learned from Saudi Arabia. *Ethics, Medicine and Public Health, 18*, Article 100705. https://doi.org/10.1016/j.jemep.2021.100705

Jermias, J., Fu, Y., Fu, C., & Chen, Y. (2023). Budgetary control and risk management institutionalization: A field study of three state-owned enterprises in China. *Journal of Accounting & Organizational Change, 19*(1), 63–88. https://doi.org/10.1108/JAOC-06-2021-0086

Jia, J., & Bradbury, M. E. (2020). Complying with best practice risk management committee guidance and performance. *Journal of Contemporary Accounting and Economics, 16*(3), Article 100225. https://doi.org/10.1016/j.jcae.2020.100225

Jiang, H., Jia, J., & Chapple, L. (2023). Enterprise risk management and investment efficiency: Australian evidence from risk management committees. *Australian Journal of Management, 49*(3), 366–402. https://doi.org/10.1177/03128962221144513

Kao, M.-C., Lin, C.-Y., Hsu, P.-P., & Chen, Y.-H. (2011). Impact of the financial crisis and risk management on performance of financial holding companies in Taiwan. *World Academy of Science, Engineering and Technology, 50*, 413–417. https://www.researchgate.net/publication/290024392_Impact_of_the_financial_crisis_and_risk_management_on_performance_of_financial_holding_companies_in_Taiwan

Karim, N. A., Nawawi, A., & Salin, A. S. A. P. (2018). Inventory management effectiveness of a manufacturing company–Malaysian evidence. *International Journal of Law and Management, 60*(5), 1163–1178. https://doi.org/10.1108/IJLMA-04-2017-0094

Khikmah, S. N., Rohman, A., & Januarti, I. (2023). The role of internal audit and leadership style in increase of fraud prevention: A stewardship theory perspective [Special issue]. *Corporate & Business Strategy Review, 4*(4), 271–278. https://doi.org/10.22495/cbsrv4i4siart8

Krause, T. A., & Tse, Y. (2016). Risk management and firm value: Recent theory and evidence. *International Journal of Accounting & Information Management, 24*(1), 56–82. https://doi.org/10.1108/IJAIM-05-2015-0027

Lindow, P. E., & Race, J. D. (2002). Beyond traditional audit techniques. *Journal of Accountancy, 194*(1), 28–33. https://www.journalofaccountancy.com/issues/2002/jul/beyondtraditionalaudittechniques/

Mackey, A., Mackey, T. B., & Barney, J. B. (2007). Corporate social responsibility and firm performance: Investor preferences and corporate strategies. *Academy of Management Review, 32*(3), 817–835. https://doi.org/10.5465/amr.2007.25275676

Mihret, D. G., & Woldeyohannis, G. Z. (2008). Value-added role of internal audit: An Ethiopian case study. *Managerial Auditing Journal, 23*(6), 567–595. https://doi.org/10.1108/02686900810882110

Mitton, T. (2004). Corporate governance and dividend policy in emerging markets. *Emerging Markets Review, 5*(4), 409–426. https://doi.org/10.1016/j.ememar.2004.05.003

Nahar, S., Jubb, C., & Azim, M. I. (2016). Risk governance and performance: A developing country perspective. *Managerial Auditing Journal, 31*(3), 250–268. https://doi.org/10.1108/MAJ-02-2015-1158

Nawawi, A., & Salin, A. S. A. P. (2018). Whistle blowing intentions — Evidence from Malaysian PLC. *International Journal of Law and Management, 60*(5), 1111–1125. https://doi.org/10.1108/IJLMA-04-2017-0096

Nawawi, A., & Salin, A. S. A. P. (2019). To whistle or not to whistle? Determinants and consequences. *Journal of Financial Crime, 26*(1), 260–276. https://doi.org/10.1108/JFC-10-2017-0090

Nguyen, T. Q., Truong, T. H., Tran, M. D., Phung, V. H., Nguyen, T. L., & Tran, B. M. (2024). Determinants influencing the effectiveness of internal auditing and the responsibility of auditors in fraud detection in an emerging country [Special issue]. *Journal of Governance & Regulation, 13*(1), 310–321. https://doi.org/10.22495/jgrv13i1siart5

Orlitzky, M., & Benjamin, J. D. (2001). Corporate social performance and firm risk: A meta-analytic review. *Business & Society, 40*(4), 369–396. https://doi.org/10.1177/000765030104000402

Paul, S. K., Chowdhury, P., Moktadir, M. A., & Lau, K. H. (2021). Supply chain recovery challenges in the wake of COVID-19 pandemic. *Journal of Business Research, 136*, 316–329. https://doi.org/10.1016/j.jbusres.2021.07.056

Petraşcu, D., & Tieanu, A. (2014). The role of internal audit in fraud prevention and detection. *Procedia Economics and Finance, 16*, 489–497. https://doi.org/10.1016/S2212-5671(14)00829-6

Prawitt, D. F., Sharp, N. Y., & Wood, D. A. (2012). Internal audit outsourcing and the risk of misleading or fraudulent financial reporting: Did Sarbanes-Oxley get it wrong? *Contemporary Accounting Research, 29*(4), 1109–1136. https://doi.org/10.1111/j.1911-3846.2012.01141.x

Prawitt, D. F., Smith, J. L., & Wood, D. A. (2009). Internal audit quality and earnings management. *The Accounting Review, 84*(4), 1255–1280. https://doi.org/10.2308/accr.2009.84.4.1255

Rehman, A. U., & Anwar, M. (2019). Mediating role of enterprise risk management practices between business strategy and SME performance. *Small Enterprise Research, 26*(2), 207–227. https://doi.org/10.1080/13215906.2019.1624385

Salin, A. S. A. P., Ismail, Z., Smith, M., & Nawawi, A. (2019). The influence of a board's ethical commitment on corporate governance in enhancing a company's corporate performance. *Journal of Financial Crime, 26*(2), 496–518. https://doi.org/10.1108/JFC-04-2018-0035

Scopel, E., Moreira, V. R., & Ferraresi, A. A. (2025). Maturity of risk management in agricultural supply chains. *RAUSP Management Journal, 60*(1), 19–34. https://doi.org/10.1108/RAUSP-11-2023-0236

Shad, M. K., Lai, F. W., Fatt, C. L., Klemeš, J. J., & Bokhari, A. (2019). Integrating sustainability reporting into enterprise risk management and its relationship with business performance: A conceptual framework. *Journal of Cleaner Production, 208*, 415–425. https://doi.org/10.1016/j.jclepro.2018.10.120

Sharfman, M. P., & Fernando, C. S. (2008). Environmental risk management and the cost of capital. *Strategic Management Journal, 29*(6), 569–592. https://doi.org/10.1002/smj.678

Shariman, J., Nawawi, A., & Salin, A. S. A. P. (2018). Issues and concerns on statutory bodies and federal government — Evidence from Malaysian Auditor General's report. *International Journal of Public Sector Performance Management, 4*(2), 251–265. https://doi.org/10.1504/IJPSPM.2018.090757

Stulz, R. M. (1996). Rethinking risk management. *Journal of Applied Corporate Finance, 9*(3), 8–25. https://doi.org/10.1111/j.1745-6622.1996.tb00295.x

Sturm, S., Hohenstein, N. O., Birkel, H., Kaiser, G., & Hartmann, E. (2022). Empirical research on the relationships between demand and supply-side risk management practices and their impact on business performance. *Supply Chain Management: An International Journal, 27*(6), 742–761. https://doi.org/10.1108/SCM-08-2020-0403

Sulub, S. A., Salleh, Z., & Hashim, H. A. (2020). Corporate governance, SSB strength and the use of internal audit function by Islamic banks: Evidence from Sudan. *Journal of Islamic Accounting and Business Research, 11*(1), 152–167. https://doi.org/10.1108/JIABR-12-2016-0148

Turnbull Review Group. (2005). *Internal control: Revised guidance for directors on the Combined Code* (*Turnbull Guidance*). Financial Reporting Council. https://www.frc.org.uk/getattachment/fe1ba51a-578d-4467-a00c-f287825aced9/Revised-Turnbull-Guidance-October-2005.pdf

Ullah, F., Qayyum, S., Thaheem, M. J., Al-Turjman, F., & Sepasgozar, S. M. E. (2021). Risk management in sustainable smart cities governance: A TOE framework. *Technological Forecasting & Social Change, 167*, Article 120743. https://doi.org/10.1016/j.techfore.2021.120743

Verschoor, C. C. (1998). A study of the link between a corporation's financial performance and its commitment to ethics. *Journal of Business Ethics, 17*(13), 1509–1516. https://doi.org/10.1023/A:1006020402881

Yang, C. H., & Lee, K. C. (2020). Developing a strategy map for forensic accounting with fraud risk management: An integrated balanced scorecard-based decision model. *Evaluation and Program Planning, 80*, Article 101780. https://doi.org/10.1016/j.evalprogplan.2020.101780