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The moderating role of sector risk in the relationship between ESG and financial performance: Evidence from top companies in Malaysia

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Abstract: This paper delves into the role of contextual factors, specifically examining how sector risks interact with the relationship between ESG and financial returns in Malaysian companies. ESG practice integration into business strategies has gained momentum, but understanding the link between ESG and financial performance remains complex. Utilising ESG data from 2019 to 2021 and corresponding financial data lagged by one year, this study analysed the impact of overall and pillar-specific ESG scores on financial returns across sectors categorised as high, medium, and low risk. The findings highlight the critical role of sector risk as a moderating variable. The high-risk sector has strong governance initiatives that bolster financial performance, while social initiatives showed mixed effects. Governance efforts become strategic advantages in high-risk sectors by mitigating risks and attracting investors. Conversely, the medium-risk sector witnessed a positive association between social initiatives and returns, but other ESG factors exhibited varied impacts. Notably, the low-risk sector exhibited minimal links between ESG and financial performance, with certain factors displaying negative tendencies. This suggests that the financial impact of ESG practices is not uniform and instead varies dramatically depending on the risk profile of the sector. While the insights generated by this research are valuable, it is crucial to acknowledge certain limitations, such as a modest sample size and potential influences from the COVID-19 pandemic. By elucidating sector-specific variations, this study empowers companies to strategically align their ESG initiatives with their risk profiles and achieve optimal financial outcomes.
Keywords: *ESG, Financial performance, Malaysia, Resource-based view, Sector risk.*

1. Introduction

ESG, which stands for Environmental, Social, and Governance, is increasingly important in firms' decision-making processes. Investors and businesses now recognize that ESG is valuable in evaluating a firm's impact beyond just financials. Firms with renewable energy access or robust employee relations often exhibit strong environmental and social performance. Likewise, commitment to transparency and effective corporate boards signals good governance. By considering these ESG factors, companies gain a more holistic view of performance and stakeholder impact. Integrating ESG is thus critical for adopting sustainable, responsible business practices.

While substantial research explores the ESG-financial performance relationship across contexts, emerging markets remain underexamined, especially in ASEAN countries like Malaysia, where ESG interest is nascent. Studies by Esa and Anum Mohd Ghazali [1]; Atan, et al. [2] and Mohammad and Wasiuzzaman [3] shed light on ESG factors' impacts on Malaysian firm performance, corporate social responsibility, and ESG disclosure transparency. Their findings offer insights for investors, policymakers, and stakeholders, highlighting ESG's importance in local financial and investment

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decisions. Broader ASEAN-focused research by Tarmuji, et al. [4] and Ghazali [5] provides evidence of regional ESG practices influencing economic performance and growth. Additionally, studies like Zawawi, et al. [6] and Adeneye, et al. [7] examine gender diversity's effects on ESG disclosures and ESG performance's impact on capital structure in Malaysia. Other local research by Ahmad, et al. [8] and Lestari and Adhariani [9] explores ESG reporting's influence on firm value and the intellectual capital-financial performance relationship, delivering valuable Malaysian perspectives.

Globally, the intricate ESG factors-financial performance link has attracted vast research attention. Studies like Friede, et al. [10]; Iazzolino, et al. [11] and Pacelli, et al. [12] offer useful aggregated evidence, multi-sectoral analyses, and sector-specific portfolio examinations. While past evidence largely indicates a positive ESG-financial correlation, recent trends suggest potential weakening. The COVID-19 pandemic further complicates this relationship, as research by Broadstock, et al. [13] and Ademi and Klungseth [14] reveals that ESG performance is affected by financial risk, markets, and returns during the crisis. However, nuanced Malaysian sector-specific exploration is still needed.

Recognising this relationship's evolving, context-dependent nature, this paper meticulously examines the ESG-financial performance within Malaysian firms. This study intends to investigate sector risk's moderating effect based on Jasni and Yusoff [15]. While Jasni and Yusoff [15] explored cross-sectoral links, this 2023 study analyses how inherent sector risk influences the magnitude and direction of this relationship. It enables a better understanding of ESG benefits across risk contexts, addressing the following: To what extent does sector risk moderate ESG's financial impact? By examining this question, the paper aims to enrich knowledge and provide comprehensive insights into the contextual factors shaping this dynamic relationship within Malaysia. The research promises valuable perspectives on how ESG and financial performance interplay locally. Beyond academic contributions, it aspires to deliver actionable insights for sector businesses and policymakers, potentially informing sustainable practice cultivation within Malaysia's dynamic business landscape.

The paper is structured as follows: Section 2 presents the literature review and hypotheses development; Section 3 defines the research method; Section 4 presents and discusses empirical results; and Section 5 concludes the paper by discussing implications, limitations, and recommendations for further research.

2. Literature Review

The growing prominence of Environmental, Social, and Governance (ESG) considerations for companies is multifaceted. Beyond impacting social responsibility and sustainability, research indicates a positive relationship between ESG factors and firm valuations [16, 17]. This suggests that robust ESG performance may enhance financial performance and market value, making it relevant for business success and investment decisions.

The COVID-19 pandemic underscored strong ESG performance's potential to mitigate financial risks during crises [13]. Similar benefits apply beyond market downturns, with studies like [18] finding positive links between ESG and financial performance in emerging market banks. According to Xu and Zhang [19] discovery that corporate social responsibility (CSR) correlates with business value in South Korea, this relationship endures across established and emerging markets.

Numerous studies have examined ESG performance implications in Malaysia, revealing significance for firm performance and sustainable development. Research by Esa and Anum Mohd Ghazali [1];Atan, et al. [2] and Zhao, et al. [20] identified positive ESG-financial performance associations, highlighting ESG factors' influence on operations, reputation, and sustainability. Further findings by Alsayegh, et al. [21];Lee [22] and Setiani [23]support this relationship, emphasizing disclosure, governance, and diversity in driving financial and sustainability outcomes. While some studies, like Rahman and Lau [24], report mixed results, evidence overwhelmingly indicates a positive correlation.

The Resource-Based View (RBV) theory can help us better understand the ESG financial link. RBV posits that a firm's competitive advantage stems from unique resources and capabilities [25, 26]. When these are valuable, rare, inimitable, and non-substitutable (VRIN), they confer an edge. Per RBV,

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environmental and social constraints can incentivize innovative resources, enabling adaptation and performance improvements [27]. Thus, firms with advantageous ESG resources like renewable energy access or robust governance may exhibit superior ESG and financial performance.

Several studies have investigated the ESG-financial relationship using various performance measures. Buallay [28] examined ESG correlations with bank performance metrics like Return On Assets (ROA), Return on Equity (ROE) and market performance. Secinaro [29] explored climate policies' corporate financial performance impacts using ROA. Eliwa, et al. [30] studied environmental performance and firm valuation via Tobin's Q. Hamzah [31] analyzed governance's moderating role between CSR and performance using ROA and Tobin's Q. These showcase the diverse approaches to exploring ESG-financial links across indicators.

Even though there is already research on this topic, more needs to be done on certain ESG factors and how they affect different financial indicators, including accounting-based measures in Malaysia. This gap presents an opportunity to provide valuable regional contextual insights into the multifaceted ESG-financial performance relationship.

2.1. Environmental Performance and Financial Performance in Varying Sectors

The relationship between environmental performance and financial performance has attracted substantial attention within the resource-based view (RBV) framework. RBV posits that a firm's unique resources and capabilities drive competitive advantage, ultimately impacting financials. Examining environmental performance through this lens illuminates how it can be a valuable resource, potentially leading to superior financial results.

Several studies have found evidence supporting this positive linkage. Bananuka and Acquah [32] demonstrated that sustainable logistics practices enhance environmental reputation, positively influencing financial performance. Similarly, Baah [33] observed a direct relationship between sustainable environmental practices and financial performance in UK SMEs. These findings suggest strategic environmental resource and capability management can translate into economic advantages. Li [34] further confirmed this notion, finding a positive correlation between proactive environmental strategies and financial performance measures like ROA.

However, the relationship is not always straightforward. Gull [35] discovered a negative relationship where firms with lower environmental performance than their industry peers exhibited better financials. Dïnçer and Altınay [36] also reported sustainability reports negatively impacting financial performance in Turkish banks. These findings indicate potential trade-offs or context-specific factors that can dampen positive environmental performance effects.

Furthermore, some studies within the RBV framework have found no significant relationship between the variables. Rustiarini [37] found the "3Rs" strategy (reduce, reuse, recycle) had no significant financial performance impact in hospitality. Similarly, Algarni [38] and Baah [33] reported no significant association between sustainable logistics and financial performance in emerging economies. These mixed findings underline the complexity and context-dependence, suggesting additional factors beyond RBV, like industry characteristics, may play a role.

The environmental-financial performance relationship within RBV is multifaceted and dynamic. While some studies provide positive association evidence, others reveal negative or insignificant relationships. Acknowledging the interplay of various factors and context-specific dynamics is crucial for fully understanding this complex relationship. Future research should delve deeper into moderating factors and industry nuances to better comprehend how environmental performance translates into financial outcomes.

Hence, this paper develops the following hypotheses:

H_1: The impact of environmental performance on financial performance varies depending on the sector-risk level of the firm.

2.2. Social Performance and Financial Performance in Varying Sectors

The relationship between social and financial performance has ignited debate within the resource-based view (RBV) framework. RBV postulates that a firm's unique resources and capabilities drive its competitive advantage and ultimately influence financial outcomes. Examining social performance through this lens reveals its potential as a valuable resource, potentially leading to financial success.

Some studies have uncovered a positive association, suggesting that firms actively engaged in corporate social responsibility (CSR) activities tend to achieve superior financial performance [39, 40]. These findings argue that CSR can enhance a firm's reputation, attract customers, boost employee morale and productivity, and mitigate risks, all of which contribute to improved financial results.

However, the relationship is not universally positive. Conversely, studies by Chakroun [41] and Dkhili and Dhiab [42] highlight the potential for a negative association. They argue that CSR can be resource-intensive, diverting resources from core business activities and possibly hindering financial performance. This suggests a potential trade-off between pursuing social and financial goals.

Further complicating the picture, some studies, such as those by Wahyuningrum and Djajadikerta [43] and Awais and Siddiqui [44] report no significant relationship between social and financial performance. These findings point toward a more nuanced understanding, suggesting that the relationship may be context-dependent and influenced by industry characteristics. The interplay between social and financial performance within the RBV framework appears complex and multifaceted. While positive and negative associations have been observed, the lack of consistent findings underscores the need for further research. Delving deeper into the underlying mechanisms and contingencies will be crucial to unravelling the nuances of this dynamic relationship and gaining a more comprehensive understanding of how social performance ultimately translates into financial outcomes.

Thus, this paper presents the ensuing hypotheses:

H_2: The impact of social performance on financial performance varies depending on the firm's sector risk level.

2.3. Governance Performance and Financial Performance in Varying Sectors

The resource-based view (RBV) posits that a firm's competitive advantage and, consequently, its performance hinge on its unique resources [45]. These resources, encompassing physical assets, human capital, and organizational structures, serve as the foundation for value creation and ultimately influence key metrics like profitability, productivity, and market valuation. RBV sheds light on the crucial link between governance effectiveness and financial performance. Governance effectiveness refers to the quality and functionality of a firm's governance mechanisms, including board composition, independence, and gender diversity [46]. Numerous studies, including Shahwan [47] have established positive correlations between robust governance practices and improved financial outcomes.

Furthermore, the resource-based view (RBV) suggests that ESG activities can contribute to financial success. ESG encompasses a range of stakeholder-oriented activities, including employee relations, diversity management, corporate governance, and corporate social responsibility involving community engagement [48]. A study in the telecommunications industry in Malaysia found that ESG strategies are value-driven for sustainable business models and competitiveness [49] further emphasising the multifaceted nature of this relationship. Additionally, RBV can shed light on the complementary role of corporate structure in value creation within green supply chain management (GSCM) practices. GSCM focuses on environmental protection and sustainability, and its implementation can positively influence corporate financial performance [50]. Studies like Zhang and Li [51] on Chinese agricultural ventures demonstrate how green proactiveness, a sub-dimension of green entrepreneurial orientation, can contribute to financial success.

A firm's resource base efficiency, including traditional elements like physical and human capital and intangible resources like governance and CSR, can significantly impact critical financial metrics. However, acknowledging context and industry specifics that can influence these relationships is crucial, necessitating further research and nuanced analysis. The hypotheses put forth in the paper are as follows:

H₈: The impact of governance performance on financial performance varies depending on the firm's sector risk level.

The research framework, illustrated in Figure 1, examines the relationship between ESG performance and financial performance while considering the impact of sector-risk levels.

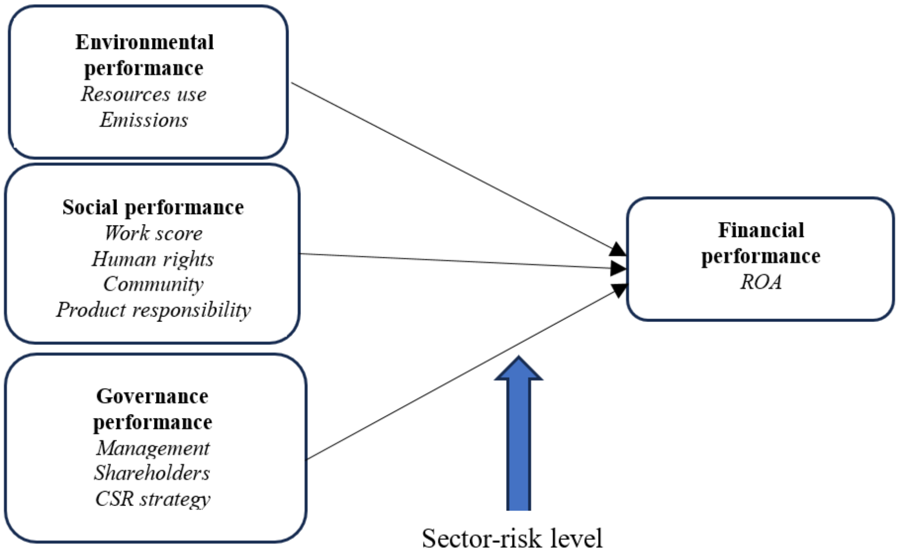

Figure 1.
Research framework.

3. Research Methodology

This paper delves into the intricate relationship between ESGand financial performance in the Malaysian context. Employing a quantitative approach, the study leverages numerical data to rigorously test hypotheses and draw statistically significant conclusions. At its core, the investigation centers on the link between a company's ESG performance, measured by a comprehensive score encompassing environmental, social, and governance factors, and its financial success, as captured by Return on Assets (ROA). The environmental factor delves into resource utilization and emissions, while the social factor encompasses aspects like workforce well-being, human rights, community engagement, and product responsibility. Governance factor examines the effectiveness of management practices, shareholder relationships, and corporate social responsibility strategies.The study also includes sector-risk levels, categorised as high, medium, and low-risk sectors, which serve as a moderating variable. Control variables such as debt or equity (debt) and Gross Domestic Product (GDP) are incorporated to account for potential influencing factors.The data was sourced from the Refinitiv Eikon Database, a widely recognised and comprehensive financial resource used in academic and industry settings. This database offers reliable and standardised data on various aspects of the firm, including ESG scores and financial performance indicators.

The dataset covers three years (2019-2021) to reflect recent trends and advancements in ESG performance. Additionally, a one-year lag (2020-2022) was incorporated to account for the time lag between implemented ESG scores and their impact on financial outcomes. A strict set of criteria was used to select appropriate companies for analysis. The dataset consisted of non-financial entities listed on the Malaysian stock exchanges with complete data for relevant variables. Industries associated with potential social harm, such as alcohol, gambling, and firearms, were excluded based on Garcia, et al. [52]. After a thorough evaluation, the top 100 firms were selected, and a final sample of 30 (90 observations) was obtained. This study classified firms into three risk categories: high-risk, medium-risk, and low-risk, based on the ESG matrix from S&P Global Ratings [53] also used in Jasni and

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Yusoff [15]. This sample ensured diversity, with ten high-risk, ten medium-risk, and ten low-risk firms. This strict selection process made it possible to look at a lot of companies with different levels of risk, which gave us more a more complete picture of how ESG performance affects financial outcomes in Malaysia.

Descriptive analysis was used to understand data distribution and identify potential relationships between variables. For the primary regression analysis, Ordinary Least Squares (OLS) with panel-corrected standard errors (PCSEs) were utilised to account for corporate effects. PCSEs were preferred over separate OLS due to their superior performance when the error terms in the equations are correlated, known as contemporaneous correlation. This method has been proven effective by Kumawat and Patel [54] and Wang, et al. [55]. STATA software was used for data analysis to take advantage of its consistency, detailed output documentation, and advanced research methodology. Additionally, autocorrelation and heteroscedasticity were observed, and the PCSE method was employed to address these issues. This method took heteroscedasticity into account and made it possible to estimate parameters consistently in autocorrelation. The goal was to lessen the effect of these problems on the regression analysis and make the estimates of the coefficient and standard deviation more accurate.

The regression model equations used in this paper are as follows:

Model 1:

$$FINP\ (roa)_{it+1} = \beta_0 + \beta_1 env_{it} + \beta_2 soc_{it} + \beta_3 gov_{it} + \beta_4 debt_{it} + \beta_5 gdp_{it} + \varepsilon_{it}$$

Model 2:

$$\begin{aligned} FINP\ (roa)_{it+1} &= \beta_0 + \beta_1 e\_resourceuse_{it} + \beta_2 e\_emissions_{it} + \beta_3 s\_workscore_{it} \\ &+ \beta_4 s\_humanright_{it} + \beta_5 s\_community_{it} + \beta_6 s\_productresp_{it} \\ &+ \beta_7 g\_management_{it} + \beta_8 g\_shareholders_{it} + \beta_9 g\_csrstrategy_{it} + \beta_{10} debt_{it} + \beta_{11} gdp_{it} + \varepsilon_{it} \end{aligned}$$

Additional descriptions:

ε = Error term.

i = Denotes the cross-sectional dimension for firms.

t+1 = Denotes the dynamic (time series) dimension lagging 1 year.

4. RESULTS AND DISCUSSION OF FINDINGS

4.1. Descriptive Analysis

Analysing the ESG factors across firms with different risk levels can offer valuable insights into the relationship between sustainability practices and financial performance. Table 1 presents the mean values for the descriptive statistics included in the study. Notably, the high-risk sector strategically emphasises environmental considerations, as reflected by the highest mean environmental score (55.198). This prioritisation suggests a proactive approach to mitigating sector-specific challenges, potentially contributing to long-term resilience and enhanced financial performance. In contrast, while having the lowest ESG scores on average, low-risk firms demonstrate the highest financial performance, as indicated by the highest mean Return on Assets (ROA) at 21.283. This paradoxical finding implies that well-established market positions and potentially lower demands for aggressive ESG implementation contribute to their superior profitability.

Medium-risk firms distinguish themselves with the highest mean governance score (66.171), emphasising the importance of robust internal controls and risk management practices in navigating moderate-risk environments. Surprisingly, low-risk firms showcase the highest mean social responsibility score (60.669), suggesting well-established practices in community engagement and social impact. The observed trends align with the notion that low-risk sectors may emphasise social responsibility more, given their stability and market positioning.

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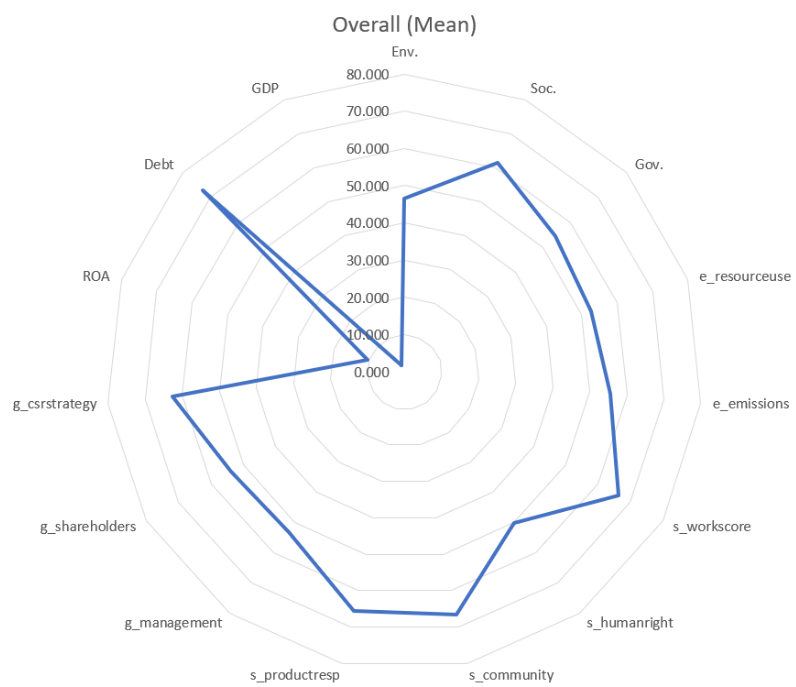
Table 1.
Descriptive statistics for the study (Mean).

Variables	Overall	High-risk	Medium-risk	Low-risk
Env.	46.510	55.198	52.041	32.291
Soc.	61.560	67.817	56.195	60.669
Gov.	54.475	54.646	66.171	42.610
e_resourceuse	52.516	58.937	53.183	45.428
e_emissions	55.471	62.176	65.601	38.638
s_workscore	66.207	73.092	62.592	62.937
s_humanright	50.144	70.960	39.988	39.485
s_community	66.515	70.795	63.462	65.289
s_productresp	65.616	56.872	74.357	65.619
g_management	53.071	49.827	72.611	36.775
g_shareholders	53.704	60.172	45.170	55.769
g_csrstrategy	62.662	70.462	65.483	52.040
ROA	10.526	6.274	4.020	21.283
Debt	72.839	51.132	137.025	30.360
GDP	1.933	1.933	1.933	1.933

Companies in the high-risk sector tend to have higher ESG scores than those in the medium or low-risk sector, suggesting a focus on improving ESG performance in high-risk sector. However, financial performance measures such as return on assets exhibit significant variability across risk categories, highlighting the complex relationship between ESG and financial outcomes. The results provide evidence that sector risk levels moderate ESG-financial performance relationships, with more substantial impacts seen in high- and low-risk sectors compared to medium-risk. Figure 2 depicts the mean analysis conducted on an overall basis and across different sector-risk levels, represented in a radar web visual.



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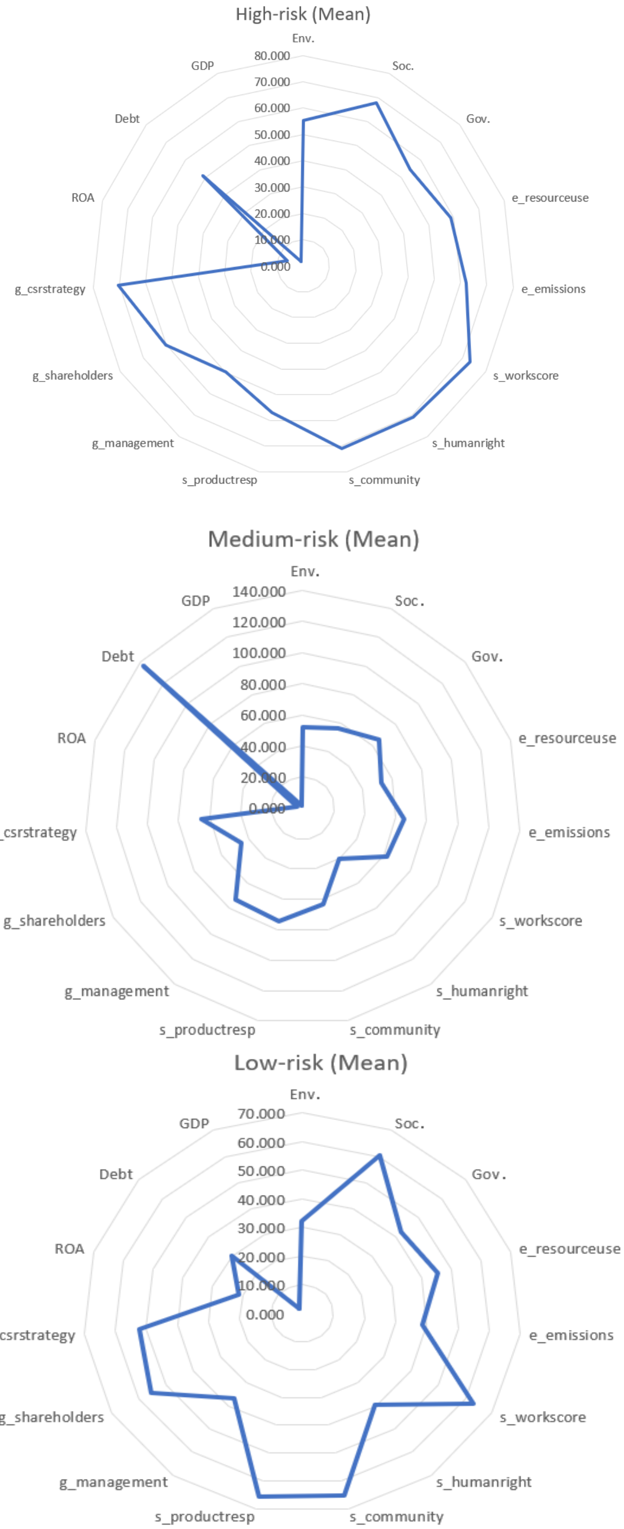

Figure 2.
Mean analysis – overall and sector-risk level.

4.2. Panel-Corrected Standard Errors (PCSE) Results

Panel-Corrected Standard Errors (PCSE) has become a pivotal analytical approach in addressing econometric challenges related to time series and cross-sectional dependencies. The subsequent section will delve into the detailed findings facilitated by the PCSE, shedding light on the nuanced dynamics observed in high-risk, medium-risk, and low-risk sectors. Table 2 presents the results of Panel-Corrected Standard Errors (PCSE) across different sector-risk levels.

Table 2.
Panel-corrected standard errors (PCSE) results across sector-risk level.

Variables	High risk				Medium risk				Low risk			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Env.	-0.178	**			0.073				0.118			
Soc.	-0.137				0.083				-0.613			
Gov.	0.138	***			0.031				-0.019			
e_resourceuse			-0.101				0.19	*			0.474	*
e_emissions			-0.029				-0.073				-0.03	
s_workscore			-0.15	*			0.075				0.2	
s_humanright			0.067				0.069				0.049	
s_community			-0.064				-0.243	*			-0.104	
s_productresp			0.024				-0.076				-0.209	
g_management			0.152	***			0.020				-0.127	
g_shareholders			-0.144				-0.014				0.3	
g_csrstrategy			0.063				0.086				-0.256	*
Debt			-0.025		0.02		0.017		-0.106		-0.391	**
GDP			0.338	***	0.3		0.157		0.533		-0.15	
Cons			20.579	**	-9.528		3.375		56.695	*	21.583	
Rho	-0.105		-0.001		0.465		0.281		0.216		-0.314	
R-squared	0.521		0.587		0.076		0.3293		0.146		0.59	
Wald chi2(8)	310.320		684.890		61.020		133.770		22.34		1320.3	
Prob > chi2	0.000		0.000		0.000		0.000		0.0005		0.000	
VIF	1.240		3.210		2.51		5.510		1.79		3.24	

Note: ***Statistical significance at the 1%.
**Statistical significance at the 5%.
*Statistical significance at the 10%.

In exploring firms in high-risk, medium-risk, and low-risk sectors, distinct patterns in the impact of Environmental, Social, and Governance (ESG) factors on financial performance have come to light. Within the high-risk category, environmental factors exhibit a negative and statistically significant impact (-0.178, $p < 0.01$), emphasising their pivotal role in negatively influencing the dependent variable. While social factors show a negative trend, the lack of statistical significance (-0.137) implies their impact is not robust in high-risk situations. Notably, governance has a strong and significant positive impact (0.138, $p < 0.001$), underscoring its consistent and critical role in navigating risks and bolstering financial outcomes in high-risk environments.

Moving on to the medium-risk sector, environmental factors have a positive effect is not statistically significant (0.073), indicating that it is not as strong as in the high-risk scenario. Social factors similarly exhibit a positive yet statistically insignificant impact (0.083), indicating a nuanced relationship in medium-risk contexts. While positively influencing financial performance, governance does not attain statistical significance (0.031), revealing a moderated effect in these environments. The model's overall explanatory power in the medium-risk category is notable, capturing 58.7% of the variance in the dependent variable.

Environmental factors in the low-risk sector showcase a positive impact without statistical significance (0.118), suggesting a potentially positive effect requiring cautious interpretation. Conversely, social factors exhibit a notable negative impact, although statistical significance is not provided (-0.613), introducing an intriguing dynamic in low-risk scenarios. Governance, with a negative impact and lacking statistical significance (-0.019), further adds complexity to the role of governance in influencing financial outcomes in stable environments. The model's overall explanatory strength in the low-risk category is reasonable, explaining 59% of the variance in the dependent variable.

Across all risk categories, governance consistently emerges as a significant positive influencer across all risk categories, highlighting its enduring importance, particularly in the high-risk sector. The varying significance and impact of environmental and social factors underscore the nuanced nature of their influence, contingent on the level of risk. The models exhibit reasonable goodness of fit, providing a robust framework for understanding the substantial proportion of variance in the dependent variable across diverse risk categories. These findings offer valuable insights into how ESG factors intersect with financial performance in different risk contexts, guiding strategic considerations for businesses navigating varied risk landscapes.

4.3. Discussion of the Findings

The analysis portrayed the intricate interplay between ESG performance, financial outcomes, and sector risk levels in Malaysia. A "one-size-fits-all" approach is ineffective, as distinct narratives unfold across risk categories. Addressing the central research question, "To what extent do sector-risk levels moderate the ESG-financial performance impact?" the findings provide compelling insights with major implications for researchers and practitioners.

In high-risk sectors, environmental leadership takes center stage [16]. Robust environmental practices demonstrably contribute to financial success, likely by mitigating reputational risks and attracting environmentally conscious investors [17]. This contrasts with H1 and differs from Shakil, et al. [18] observation of a positive ESG-financial link in emerging market banks, often characterized by inherent risk. Furthermore, robust governance structures, mirroring Xu and Zhang [19] positive associations in South Korea, bolster stakeholder trust and resource access, boosting financial performance (H3). This resonates with the Resource-Based View (RBV), where valuable, inimitable resources like environmental and governance practices drive competitive advantage [25].

The picture becomes more nuanced for medium-risk firms, where ESG's impact appears moderate (H2, H3). While some ESG factors like social responsibility and resource usage exhibit positive trends, their statistical significance weakens compared to their high-risk counterparts. This aligns with H2 Atan, et al. [2] and Zhao, et al. [20] Malaysian findings, suggesting moderated ESG impact in established firms, potentially with stronger existing reputations and stakeholder relationships that diminish marginal ESG benefits. As observed here and in Hamzah [31] the mixed relationships underscore potential challenges or opportunities with implementing specific ESG practices in this context. This makes it even more important for medium-risk companies to be careful and tailor their ESG approaches, since some practices may have unintended effects. This is similar to what Chakroun [41] and Dkhili and Dhiab [42] said about possible CSR trade-offs.

The ESG-financial connection appears weakest in low-risk firms, resembling a muted lullaby. Notably, some environmental and social factors exhibit negative coefficients, suggesting potential trade-offs or implementation inefficiencies here. This aligns with H2 and Rahman and Lau [24] Malaysian findings, highlighting minimally aggressive ESG adoption impact in low-risk settings due to established financial positions and potentially lower improvement pressure. This resonates with RBV, where valuable existing resources like financial performance and stakeholder relations may diminish further ESG benefits. Consequently, the findings unveil sector risk's importance as a crucial ESG-financial performance moderator in Malaysia. Each risk category necessitates tailored ESG implementation and evaluation, echoing Alsayegh, et al. [21] and Lee [22] calls for context-specific analysis. Acknowledging this complexity moves beyond simplistic generalizations and enables optimized ESG strategies across the risk spectrum. This nuanced understanding can contribute to a more sustainable, inclusive Malaysian economic landscape, aligning with the growing emphasis on responsible business practices and ESG integration regionally.

5. Conclusion

This study has delved into the intricate ESG (Environmental, Social, Governance) performance and financial outcome relationships within Malaysian companies, emphasising sector-risk levels' moderating influence. Guided by hypotheses (H1, H2, and H3), the investigation has uncovered nuanced patterns distinguishing high-, medium-, and low-risk sectors, offering valuable academic and practitioner insights. The empirical findings highlight sector risk's pivotal moderating role in shaping ESG-financial dynamics. In the high-risk sector, robust governance emerges as a significant financial success driver, affirming strategic focus's importance in mitigating reputational risks and enhancing stakeholder trust.

Transitioning to medium-risk environments reveals ESG practices' nuanced impact. While observable positive trends exist for factors like social responsibility and resource usage, the lack of statistical significance emphasises the need for tailored ESG implementation. This aligns with prior literature emphasising the relationship's complexity and context-specific strategy necessity. Contrastingly, the ESG-financial connection weakens in the low-risk sector, as anticipated. Negative environmental and social coefficients suggest potential implementation trade-offs or inefficiencies in this stable context. These observations resonate with earlier studies highlighting substantial financial benefit challenges in sectors characterised by established stability and robust stakeholder relationships.

This study's overall contribution lies in its nuanced understanding of ESG-financial interplay across Malaysia's diverse risk spectrum. Moving beyond broad generalisations, the findings underscore tailored, context-aligned ESG strategy needs. The research invites further exploration into ESG performance's multifaceted dimensions and varying financial impacts, contributing to the evolving sustainable business landscape. As companies navigate increasingly complex, interconnected global environments, grasping the ESG-financial relationship's contingent nature becomes imperative. Acknowledging sector-risk moderation enables optimized ESG strategies across risk categories, fostering sustainability and responsibility in Malaysia and beyond.

While providing Malaysian ESG-financial insights, this study has limitations requiring future attention. The small sample size may restrict generalizability. Additionally, future research should consider the COVID-19 pandemic's impact. To get around these problems, we could increase the dataset and timeframe, add risk categories, and look into the long-term ESG-financial effects after the pandemic. This would help us understand more about ESG and Malaysia's financial performance.

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Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Competing Interests:

The authors declare that they have no competing interests.

Authors' Contributions:

All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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