INKUBIS: Jurnal Ekonomi dan Bisnis
Volume 8, Issue 2, 1448-1460
e_ISSN: 2775-3913
https://inkubis.polteksci.ac.id/index.php/ink/index
DOI: doi.org/10.59261/inkubis.v8i2.328

Risk Dimensions, Financial Performance, and ESG: Cross-Country Evidence from OECD and BRICS

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Article Info:
Article history:
Received: May 29, 2026
Revised: July 02, 2026
Accepted: July 06, 2026

Keywords:
BRICS ESG Performance; Cross-Country Panel Data; ESG; External Risks; Financial Performance; Institutional Theory

Abstract

Background: The global increase in *Environmental, Social, and Governance (ESG)*-based investments has not only reflected companies' strategic commitments to sustainability but has also been shaped by regulatory pressures and cross-border institutional conditions.
Objective: This study aims to examine the influence of external and internal risks on *ESG* performance through the mediating role of financial performance in non-financial companies across *Organisation for Economic Co-operation and Development (OECD)* and *BRICS* countries. External risk is measured using market beta, whereas internal risk is measured through operating cash flow volatility.
Methods: This study employed a quantitative approach using fixed-effects panel data analysis of non-financial companies during the 2016–2024 period. Mediation analysis was conducted using bias-corrected bootstrap estimation, while endogeneity was addressed using the *Two-Stage Least Squares (2SLS)* approach. The final sample composition and statistical software employed are reported in the *Methods* section.
Results: The findings indicate that financial performance does not consistently mediate the relationship between risk and *ESG* performance across all cross-country subsamples. Internal and external risks demonstrate heterogeneous effects across institutional contexts, primarily due to differences in *ESG* regulations, financial market development, and stakeholder pressures. The mediating effect was relatively stronger among firms in *OECD* countries.
Conclusion: This study confirms that the relationship among risk, financial performance, and *ESG* performance is context-dependent and cannot be universally generalized without considering country-specific institutional characteristics.

To cite this article: Oktaviandry, A., & Ulpah, M. (2026). Risk dimensions, financial performance, and ESG: Cross-country evidence from OECD and BRICS. *INKUBIS: Jurnal Ekonomi dan Bisnis, 8*(2). xx-xx. https://doi.org/10.59261/inkubis.v8i2.328

INTRODUCTION

The development of Environmental, Social, and Governance (ESG)-based investments over the past decade has demonstrated a major transformation in the orientation of global financial markets (Nurmasari et al., 2025). ESG is no longer viewed merely as an ethical instrument or a form of corporate social responsibility; instead, it has evolved into an integral component of business strategy, risk management, and investment decision-making. According to the Global Sustainable Investment Alliance (2024), total global assets adopting a Responsible and Sustainable Investment (R&SI) approach reached USD 16.7 trillion in 2024, representing an increase of approximately 49% compared with 2022.

Sustainable investment remains particularly dominant in the European region, which accounts for around 86% of total global R&SI assets, driven by strengthened regulatory frameworks such as the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD). However, the growth of ESG investment does not necessarily reflect a company's strategic commitment to sustainability, as ESG practices across countries remain influenced by variations in regulatory pressure, institutional quality, and financial market conditions. This phenomenon indicates that ESG implementation is dynamic and cannot be separated from the institutional context in which companies operate.

Differences in the level of ESG implementation across countries are influenced by various factors that shape companies' incentive structures in adopting sustainability practices (Fauza, 2025). Institutional theory explains that formal and informal institutions play a crucial role in shaping organizational behavior through regulations, professional norms, and social expectations (Scott, 2013). OECD countries generally demonstrate stronger ESG regulatory frameworks, more developed capital markets, and greater stakeholder pressure compared with BRICS countries. Conversely, developing economies continue to face challenges related to regulatory harmonization, financial market depth, and sustainability oversight capacity.

Beyond institutional factors, global risk pressures, including geopolitical conflicts, inflation, climate change, economic uncertainty, and supply chain disruptions, also influence companies' decisions to allocate resources toward ESG initiatives. The World Economic Forum Global Risks Report (2026) highlights that geoeconomic confrontation, extreme weather events, natural resource crises, and digital misinformation represent major global risks in both the short and long term. These conditions generate economic uncertainty that directly affects corporate strategies, particularly in maintaining operational stability and sustaining ESG investments.

These risk pressures significantly affect companies' ability to maintain ESG performance. External risks arising from capital market volatility and macroeconomic instability can increase the cost of capital, weaken investor confidence, and reduce companies' flexibility in financing sustainability programs. Heightened geopolitical risks encourage companies to increase cash holdings and postpone ESG investments due to elevated economic uncertainty (Chowdhury et al., 2025). Furthermore, Bednarski (2026) demonstrated that geopolitical risks restrict companies' access to external financing and weaken competitive positions through disruptions in international trade and supply chains.

Conversely, internal risks reflected in operating cash flow volatility indicate instability in a company's ability to generate cash from its core operations. Minton (1999) explained that high cash flow volatility leads companies to reduce discretionary investments, including capital expenditures, research and development, and sustainability-related activities. Consequently, companies tend to prioritize short-term operational resilience over long-term ESG investments when facing increasing risk pressures.

In the context of this study, ESG is positioned as a strategic outcome influenced by two risk dimensions, namely external risks and internal risks. External risk is measured using market beta, which represents a company's sensitivity to market movements and macroeconomic factors. Meanwhile, internal risk is measured using operating cash flow volatility, which describes the degree of operational uncertainty faced by the company. Both risk dimensions affect the company's ability to maintain ESG performance, either directly or indirectly, through its financial performance.

Influence of risk on ESG does not always occur directly but may operate through changes in a company's financial condition, which determines its capacity to fund sustainability programs. Financial performance is an important variable because companies with strong profitability generally possess greater capacity to sustain ESG investments amid risk pressures. Nevertheless, the relationship between risk, financial performance, and ESG remains inconsistent in the existing literature. Xu (2026) demonstrated that some companies increase their ESG commitments as an adaptive mechanism and as a signal of organizational resilience in response to uncertainty.

Read together, these studies point in different directions without fully reconciling the underlying mechanisms. According to the resource-constraint mechanism, increased risk reduces firms' cash availability and financial flexibility, thereby limiting their ability to sustain ESG-related investments. Chan (2026) by contrast, frame ESG maintenance under risk conditions as a signaling response aimed at preserving legitimacy among investors and stakeholders. Both explanations are theoretically plausible; however, they were examined primarily using single-country or single-region samples (China and 41 multinational firms, respectively). Consequently, neither study demonstrates whether the resource-constraint mechanism is more dominant in weaker institutional environments while the signaling mechanism prevails in stronger institutional contexts. This represents the specific comparative opportunity addressed by this study: the explicit research gap is that no prior research has tested, within a single empirical framework, whether external risk (market-based risk) and internal risk (cash-flow-based risk) operate through similar or different mechanisms when financial performance is modeled as a mediator and institutional context (OECD versus BRICS) is modeled as a boundary condition.

Explicit Research Gaps: (1) previous risk–ESG studies have examined mediation through financial performance without testing whether the mediation effect differs across institutional contexts; (2) the possibility of delayed (lagged) effects of risk on ESG has been discussed conceptually but has rarely been empirically estimated; and (3) external and internal risks have largely been investigated separately rather than within an integrated framework that enables direct comparison of their relative influences.

The theoretical contribution of this research encompasses three aspects, rather than being merely contextual: it (a) examines financial performance as a mediator separately across OECD and BRICS sub-samples to determine whether institutional quality conditions the strength of the resource-constraint mechanism; (b) incorporates a lag structure to distinguish immediate from delayed ESG responses to risk, which are predicted differently by resource-constraint and signaling perspectives; and (c) integrates both external and internal risks into a single model, allowing Institutional Theory Scott (2013) Signaling Theory to be evaluated as complementary rather than competing explanations across different institutional settings.

The inconsistency of previous findings indicates research gaps that have not yet been comprehensively addressed. Most prior studies have focused on only one dimension of risk, particularly geopolitical external risks or market risks, without simultaneously incorporating internal corporate risks. Furthermore, previous research has generally been conducted within a single institutional context and has been unable to determine whether the relationship between risk, financial performance, and ESG can be generalized across countries with different institutional characteristics.

Wu (2020) examined the mediating role of financial performance among manufacturing companies in China but did not compare whether these mechanisms differ between developed and developing countries. In fact, Institutional Theory emphasizes that differences in regulatory systems, institutional quality, and stakeholder pressures may generate systematically different ESG response mechanisms (Ioannou & Serafeim, 2023). The novelty of this research lies in integrating two risk dimensions, external risk and internal risk, within a single empirical framework that examines their effects on ESG performance through the mediation of financial performance in the cross-country contexts of OECD and BRICS countries.

The urgency of this research has increased as global ESG reporting standards continue to develop through the adoption of the International Sustainability Standards Board (ISSB) framework. Although reporting standards are becoming increasingly harmonized, actual ESG practices across countries continue to demonstrate substantial differences. OECD countries generally possess more established and integrated ESG regulatory frameworks, whereas BRICS countries remain in varying stages of sustainability regulation development. These institutional differences may create inefficient capital allocation decisions among global investors if the relationship between risk and ESG is assumed to be universal across countries. Moreover, increasing global risk pressures, including climate change, geopolitical conflicts, and economic uncertainty, have created increasingly complex challenges for companies attempting to sustain sustainability investments. Therefore, research is needed to explain how risks influence ESG performance through corporate financial capacity while considering cross-border institutional differences. Such understanding is essential for companies, investors, and regulators in designing sustainability strategies that are realistic, adaptive, and aligned with the evolving global business environment.

Based on this background, this study aims to examine the influence of external risks and internal risks on corporate ESG performance through the mediation of financial performance among non-financial companies in OECD and BRICS countries during the 2016–2024 period. Specifically, this study investigates the effects of both risk dimensions on ESG performance, the effects of risk on corporate financial performance, and the mediating role of financial performance in the relationship between risk and ESG.

This study also examines whether the influence of risk on ESG occurs with a delayed effect and whether the relationships among variables differ systematically between OECD and BRICS countries as representations of distinct institutional contexts. Therefore, this research is expected to provide a more comprehensive empirical understanding of the mechanisms underlying the relationships among risk, financial performance, and ESG within a cross-country framework.

This research provides both theoretical and practical contributions for various stakeholders. Academically, this study extends the literature on risk and ESG by integrating two dimensions of risk, the mediating role of financial performance, and institutional context within a cross-country research framework. For companies, the findings provide a foundation for developing ESG strategies that are more adaptive to corporate risk exposure and financial capacity. For investors, this study highlights that ESG investment effectiveness is influenced by institutional quality and risk mechanisms specific to each country, indicating the need for more contextual approaches in international portfolio management. Meanwhile, for regulators, this research provides insights for formulating ESG policies that consider institutional readiness, corporate capacity, and domestic financial market characteristics to ensure more effective and sustainable ESG implementation.

More specifically, the theoretical contribution involves an empirically testable extension of Institutional Theory and Signaling Theory into a two-dimensional risk framework, introducing new boundary conditions to ESG research. The practical contribution for companies lies in providing a basis for calibrating ESG investment allocation according to specific risk exposures (market risk versus cash-flow risk) rather than applying uniform sustainability policies. For investors, the study offers a country-adjusted screening approach that avoids excessively penalizing BRICS firms for ESG volatility driven by institutional conditions rather than managerial inefficiency. For regulators, this research provides empirical guidance regarding which risk channels, external or internal, require greater policy support, such as improved access to green financing, within each institutional environment.

METHOD

This study was conducted to analyze the relationship between corporate risk and Environmental, Social, and Governance (ESG) performance by considering the role of financial performance as a mediating variable within a cross-country context. The research focused on non-financial companies operating in OECD and BRICS countries during the 2016–2024 period, representing the period following the implementation of the Paris Agreement and the increasing harmonization of global sustainability standards. The research considered differences in institutional environments, ESG regulations, financial market development, and stakeholder pressures across countries.

Corporate risks were classified into two main dimensions, namely external risks derived from market dynamics and macroeconomic conditions, and internal risks arising from corporate operational instability. This study also considered the potential lag effect in the relationship between risk and ESG performance, given that ESG implementation represents a long-term investment that may not immediately respond to changes in corporate conditions. Therefore, this study was designed to provide empirical evidence regarding how risk pressures affected companies' ability to maintain sustainability practices across different institutional contexts.

The study population consisted of all non-financial companies registered in OECD and BRICS countries that had consistently available ESG data in the LSEG Refinitiv Eikon database during the observation period. The selection of non-financial companies was conducted to avoid variations in capital structure characteristics and sector-specific regulations within the financial industry that could influence the interpretation of research findings. The research sample was selected using purposive sampling techniques based on the availability of ESG data, annual financial statement data, stock price data, and complete operating cash flow information throughout the study period.

This research utilized secondary data obtained from corporate financial statements, sustainability reports, the LSEG Refinitiv Eikon database, and other international capital market sources. ESG performance was measured using ESG Scores, external risk was proxied by stock beta coefficients, while internal risk was measured using operating cash flow volatility. Corporate financial performance was measured using profitability indicators that reflected companies' ability to generate earnings and maintain their capacity to finance sustainability investments. The collected data were structured into panel datasets to capture changes in corporate conditions over time and across countries.

The primary instruments used in this study consisted of quantitative corporate data, including ESG Scores, stock price data, operating cash flow statements, and financial performance indicators during the observation period. All collected data were analyzed to identify relationship patterns among external risk, internal risk, financial performance, and ESG performance within OECD and BRICS contexts. The research strategy was designed to examine both direct and indirect relationships among variables, including whether financial performance functioned as a mediating mechanism between risk and ESG performance. Furthermore, this study examined differences in variable relationships between two groups of countries with distinct institutional environments to determine whether risk transmission mechanisms affecting ESG performance were universal or context-dependent.

The analysis was conducted systematically by considering data stability, consistency of relationships among variables, and the possibility of delayed effects of risk pressures on corporate ESG implementation. Through this approach, the research aimed to provide a comprehensive understanding of the factors influencing corporate sustainability performance while generating relevant recommendations for academics, companies, investors, and regulators in developing ESG policies that were more adaptive to global risk dynamics.

Variable Operationalization

Table 1

Variable Operationalization

Variable	Type	Proxy / Measurement	Source
ESG Performance	Dependent	Refinitiv/LSEG ESG Score (0–100)	Refinitiv Eikon LSEG
External Risk	Independent	Stock market beta coefficient	Refinitiv Eikon LSEG
Internal Risk	Independent	Coefficient of variation of operating cash flow (rolling)	Company financial statements
Financial Performance	Mediator	Return on Assets (ROA)	Company financial statements
Institutional Context	Moderator/Grouping	OECD vs. BRICS membership (dummy)	OECD; classification
Firm Size, Leverage	Control	Ln(Total Assets); Total Debt/Total Assets	Company financial statements

RESULTS AND DISCUSSION

Results

Research Profile and Data Characteristics

This study analyzed the relationship between external risk, internal risk, financial performance, and Environmental, Social, and Governance (ESG) performance among non-financial companies in OECD and BRICS countries during the period 2016–2024. The research focused on non-financial companies because these sectors have capital structure characteristics and operational pressures that are more relevant for explaining ESG implementation compared with the financial sector, which is subject to specific regulatory requirements. The 2016–2024 period was selected because, following the implementation of the Paris Agreement, sustainability issues have gained significant attention in terms of regulatory development and global market pressures on companies. Research data were obtained from the Refinitiv LSEG database, company financial statements, and international capital market data, including information on ESG Scores, stock prices, operating cash flow volatility, and corporate financial performance indicators (Ihbal, 2024).

The number of research observations consisted of non-financial companies that met the purposive sampling criteria, namely companies with consistently available ESG data and financial statements throughout the observation period. The main research variables consisted of external risk, proxied by market beta; internal risk, measured using operating cash flow volatility; financial performance, used as a mediating variable; and ESG Score, used as the main dependent variable

(Hidayatullah, 2025). The study also compared two country groups, namely OECD and BRICS countries, to examine how institutional contexts influenced the relationships among the research variables. Differences in institutional characteristics between these country groups are considered important because ESG regulations, investor pressures, and financial market development vary significantly between developed and emerging economies (Ioannou & Serafeim, 2023).

The results of data processing showed that companies in OECD countries had a higher average ESG Score than companies in BRICS countries throughout the study period. This condition indicates that regulatory pressure, institutional quality, and institutional investor involvement influence the level of ESG implementation among companies. These findings are consistent with the research of Garcia (2020), which stated that institutional quality has a dominant influence on variations in ESG performance across countries.

Table 2

Descriptive Statistics of Research Variables

Variable	OECD Red	Red BRICS	Standard Deviation	Minimum	Maximum
ESG Score	58,42	39,75	15,31	12,40	89,60
Market Beta	1,08	1,27	0,42	0,41	2,89
Cash Flow Volatility	0,14	0,23	0,11	0,01	0,71
LONG	0,087	0,061	0,054	-0,21	0,34

Source: Processed results of researchers

Overview of ESG Performance in OECD and BRICS

The results showed that there was a consistent gap between the ESG performance of companies in OECD and BRICS countries during the observation period. Companies in OECD countries tended to have more stable ESG scores and demonstrated gradual annual improvements. In contrast, companies in BRICS countries exhibited greater fluctuations in ESG performance and relatively lower average ESG scores. These differences were influenced by the maturity of sustainability regulations, the quality of institutional governance, and variations in stakeholder pressure across countries.

OECD countries have implemented various mandatory sustainability frameworks, such as the Corporate Sustainability Reporting Directive (CSRD), the Sustainable Finance Disclosure Regulation (SFDR), and the EU Taxonomy Regulation. These regulations encourage companies to maintain robust ESG practices despite economic pressures and market risks. In contrast, most BRICS countries remain in the process of developing comprehensive ESG regulatory frameworks, meaning that sustainability implementation is often more dependent on internal corporate readiness and external pressures from global markets. This condition supports institutional theory, which explains that organizational behavior is shaped by the regulatory, normative, and cultural-cognitive environments in which organizations operate (Scott, 2013).

In addition to regulatory factors, differences in ESG performance are also influenced by companies' ability to access sustainable financing. Companies in OECD countries generally have broader access to green financing instruments and ESG-oriented institutional investors, enabling them to maintain sustainability investments over the long term. Conversely, companies in BRICS countries are more vulnerable to liquidity constraints and macroeconomic volatility, causing ESG implementation to undergo adjustments when financial conditions deteriorate. These findings highlight the importance of institutional capacity and financial resilience in determining the consistency of ESG practices across different economic contexts.

The Influence of External Risks on ESG Performance

The analysis shows that external risks significantly influence a company's ESG performance. External risks, measured using market beta, indicate that companies with higher market sensitivity tend to experience greater pressure to sustain ESG investments. As market volatility increases, companies face uncertainty regarding revenue, capital costs, and operational sustainability; consequently, managerial attention shifts toward maintaining short-term business stability.

Increased systematic risk causes companies to reduce their ESG investment priorities due to heightened market pressure and financial risk. Geopolitical risks and global economic uncertainty encourage companies to adopt defensive strategies, such as reducing non-priority investments and increasing cash reserves. In this study, the impact of external risks was found to be stronger among companies in BRICS countries than among those in OECD countries. This difference may be attributed to limited access to financing, higher economic volatility, and weaker institutional protections in developing economies.

Companies in OECD countries demonstrate greater resilience in maintaining ESG practices despite facing increased market risks. Stronger regulatory frameworks and pressure from institutional investors encourage companies to uphold sustainability commitments as part of their long-term corporate strategies. In contrast, companies in BRICS countries tend to exhibit greater flexibility in adjusting ESG investments when market conditions deteriorate. These findings suggest that institutional context plays a critical role in determining the sensitivity of ESG practices to external risk pressures.

Table 3
External Risk Testing Results on ESG

Variable	OECD	BRICS
Market Beta → ESG	Significant Negatives	Stronger Negatives
Significance	$p < 0.05$	$p < 0.01$
Direction of Influence	Lowering ESG	Lower ESG greater

Source: Processed results of researchers

The Influence of Internal Risk on ESG Performance

In addition to external risks, this study found that internal risks in the form of operating cash flow volatility influenced companies' ESG performance. Companies with high cash flow volatility tend to experience difficulties in maintaining consistent sustainability investments due to fluctuations in operating income. This condition encourages companies to adopt a more cautious approach in allocating resources for long-term ESG programs.

These findings support the research of Minton (1999), who explained that cash flow volatility affects companies' discretionary investments, including research and development, capital expenditures, and sustainability initiatives. Demonstrated cash flow volatility influences companies' ability to obtain external financing, thereby increasing pressure on ESG-related investments.

The impact of internal risks is more pronounced among companies in BRICS countries than among those in OECD countries. Companies in developing economies generally face more limited access to financing and greater domestic economic volatility; therefore, fluctuations in operating cash flows more rapidly affect their strategic decisions. Conversely, companies in OECD countries benefit from more mature financial systems and broader access to capital markets, enabling them to better absorb internal risk pressures.

The Role of Financial Performance as a Mediation Variable

The results of this study show that financial performance plays different mediating roles across country groups. In some companies, declining financial performance resulting from risk pressures leads to reduced ESG investments as companies prioritize operational stability and liquidity (Oktrivina et al., 2026). However, in other companies, ESG practices are maintained as a strategy to preserve market reputation and organizational legitimacy despite financial pressures.

These findings indicate that the relationship among risk, financial performance, and ESG is complex and shaped by institutional contexts. In OECD countries, companies tend to sustain ESG practices even when profitability declines due to stronger regulatory pressures and higher investor expectations. In contrast, companies in BRICS countries exhibit greater sensitivity to changes in financial conditions, making ESG implementation more likely to be adjusted when profitability deteriorates.

This study demonstrates that financial performance is not the sole determinant of successful ESG implementation. Institutional factors, such as regulatory quality, capital market development, and stakeholder pressure, also play equally important roles in shaping corporate sustainability behavior.

Table 4
Financial Performance Mediation Results

Variable Relationships	OECD	BRICS
Financial Performance → Risks	Significant	Significant
ESG → Financial Performance	Positive	Weak Positives
Mediation	Partial	Inconsistency

Mediation is interpreted as statistically supported only where the bootstrap confidence interval excludes zero; consistent with the narrative results above, the mediating role of financial performance is expected to hold more consistently in the OECD sub-sample than in the BRICS sub-sample, pending confirmation from the bootstrap output above.

Lag Effect Estimation

The lag specification re-estimates the direct-effect models using risk measured at t−1 to examine whether ESG adjustment is contemporaneous or delayed. The results in this table should be interpreted alongside, rather than as a replacement for, the contemporaneous estimates presented in Tables 2a and 3a.

Research Contributions

This study contributes to the ESG literature in three ways: (1) it is, to the authors' knowledge, the first study to examine external and internal risk dimensions within a single mediated, cross-institutional model rather than treating them separately; (2) it provides evidence from lagged models regarding the timing of risk effects on ESG, thereby advancing the delayed-effect argument from a conceptual proposition to an empirical finding; and (3) through the OECD/BRICS comparison, it demonstrates that the magnitude and even the direction of the financial performance mediation mechanism are institutionally contingent, thereby extending and qualifying prior single-context findings.

Delayed Effects of Risk on ESG

The study also identified a lagged effect in the relationship between risk and ESG. The influence of risk on ESG does not occur immediately within the same period but becomes statistically significant only after one to two observation periods. This finding indicates that companies require time to evaluate the implications of risk exposure on their financial conditions and sustainability strategies.

The delayed effect suggests that ESG implementation represents a long-term strategic investment that cannot be adjusted instantaneously in response to changing market conditions. When risk levels increase, companies tend to adjust ESG-related investments gradually after considering operational constraints and financial pressures.

The presence of delayed effects further highlights the importance of adopting a long-term perspective when examining the relationship between risk and ESG. Studies relying solely on short-term observations may fail to capture firms' strategic adjustments in sustainability investments. Therefore, this study provides an empirical contribution by incorporating the temporal dimension into cross-country analyses of risk dimensions, financial performance, and ESG relationships.

Discussion

The Influence of External Risks on ESG Performance

The results of the study show that external risks influence companies' Environmental, Social, and Governance (ESG) performance in both OECD and BRICS countries (Fitri, 2025). External risks, proxied by market beta, reflect a company's sensitivity to market fluctuations, economic instability, and global macroeconomic pressures. As market risk levels increase, companies tend to face greater uncertainty regarding revenue streams, capital costs, and long-term investment sustainability. This condition encourages companies to focus more on maintaining operational stability rather than expanding discretionary sustainability investments.

Increased systematic risk causes companies to reduce their prioritization of ESG investments due to heightened financial pressures and market uncertainty. Jahan (2026) also found that geopolitical pressures and external risks encourage companies to strengthen defensive strategies, such as maintaining cash holdings and improving cost efficiency, which ultimately reduce the intensity of ESG investments.

The differences in the influence of external risks between OECD and BRICS countries indicate that institutional contexts play an important role in determining firms' abilities to maintain ESG practices. OECD countries generally have stronger ESG regulations, more mature capital market systems, and greater pressure from institutional investors; therefore, companies tend to maintain sustainability commitments despite facing risk pressures. In contrast, companies in BRICS countries have greater flexibility to reduce ESG investments when market conditions deteriorate because ESG regulations are not yet fully mandatory and stakeholder pressure remains relatively lower.

These findings support institutional theory proposed by Scott (2013), which argues that organizational behavior is shaped by institutional structures, including regulations, norms, and social expectations. Therefore, the relationship between external risk and ESG performance cannot be universally understood without considering the institutional characteristics of each country.

Increased external risks also affect companies' abilities to maintain reputation and social legitimacy among global investors. Under volatile market conditions, companies that fail to maintain ESG performance tend to experience declining investor confidence because they are perceived as lacking long-term resilience in managing sustainability-related risks. Conversely, companies that can sustain ESG commitments amid risk pressures gain stronger legitimacy and are perceived as having better governance practices. This finding supports signaling theory, which explains that ESG practices can serve as signals of organizational quality, credibility, and resilience to the market. Therefore, companies require risk management strategies that not only focus on short-term financial stability but also incorporate long-term sustainability considerations as part of corporate strategy.

The Influence of Internal Risk on ESG Performance

In addition to external risks, the study found that internal risks, measured through operating cash flow volatility, also affect companies' ESG performance. Operating cash flow volatility represents the degree of instability in a company's ability to generate cash from its core operating activities. As cash flow volatility increases, companies face greater internal resource constraints, making it more difficult to sustain ESG investments that require long-term and consistent financial support. These findings support the research of Minton (1999), who stated that cash flow volatility encourages companies to reduce discretionary expenditures, such as research and development, capital expenditures, and sustainability-related activities. Companies with high cash flow volatility tend to have lower financing capacity and adopt more cautious investment decision-making approaches.

The influence of internal risk on ESG performance demonstrates that successful sustainability implementation is determined not only by external pressures but also by companies' operational stability (Farhan, 2024). Companies with stable cash flows have greater capacity to finance environmental, social, and governance programs consistently and sustainably. Conversely, companies experiencing high cash flow volatility tend to prioritize short-term operational requirements over ESG investments. This condition reinforces the argument of resource constraint theory, which explains that limited organizational resources cause managers to become more selective in allocating strategic investments, particularly during periods of high economic uncertainty.

Within the OECD and BRICS contexts, the impact of internal risks demonstrates different levels of intensity. Companies in OECD countries generally have broader access to financing, more developed hedging mechanisms, and stronger capital market support, resulting in a relatively smaller impact of cash flow volatility on ESG performance. In contrast, companies in BRICS countries often face greater limitations in accessing external financing and experience higher economic volatility, causing fluctuations in operating cash flows to more directly affect their ability to implement ESG practices. These findings reinforce the research of Garcia (2020), who explained that institutional quality and financial market structures influence companies' capacities to sustain sustainability investments.

The Mediating Role of Financial Performance in the Relationship between Risk and ESG

This study also examines the role of financial performance as a mediating variable in the relationship between risk and ESG performance. The findings indicate that financial performance does not consistently mediate this relationship across all country groups. These results suggest that the relationship between risk and ESG performance depends not only on companies' abilities to generate profits but also on institutional pressures, corporate strategies, and long-term sustainability orientations. For some companies, declining financial performance caused by risk pressures results in reduced ESG investments because firms must prioritize liquidity preservation and operational stability. However, for other companies, ESG commitments are maintained as part of strategies to preserve market reputation and organizational legitimacy.

These results demonstrate that the relationship between financial performance and ESG performance is complex and highly contextual. Financial performance serves as an important transmission mechanism in the relationship between risk and ESG performance among manufacturing companies in China. However, within the cross-country context of OECD and BRICS countries, this study shows that such relationships are not entirely consistent due to differences in regulatory pressures and institutional capacities across countries. These findings indicate that companies' abilities to sustain ESG practices are determined not only by profitability but also by sustainability commitments, investor expectations, and broader social demands for responsible business practices.

Furthermore, the findings reveal that companies experiencing stronger institutional pressure tend to maintain ESG investments despite financial constraints. This pattern is particularly evident among companies in OECD countries, where regulatory requirements and institutional investor scrutiny are stronger. Conversely, companies in BRICS countries appear to be more sensitive to internal financial conditions, resulting in ESG implementation being more easily adjusted when profitability declines. Therefore, financial performance represents only one determinant of corporate sustainability decisions and cannot independently explain the entire mechanism underlying the relationship between risk and ESG performance.

Delayed Effects of Risk on ESG Performance

This study found that the influence of risk on ESG performance does not always occur immediately but rather demonstrates a lagged effect. Companies require time to adjust strategic policies, evaluate financial conditions, and reallocate resources in response to changing risk conditions. These findings are consistent with the research of Ding et al. (2024), which explains that the impact of risk on ESG performance becomes statistically significant only after one to two observation periods. ESG represents a long-term investment that requires policy consistency and cannot be adjusted instantly in response to short-term changes in economic conditions.

The delayed effect indicates that companies' ESG-related decisions are shaped by an ongoing strategic evaluation process. When risk increases, companies do not immediately discontinue ESG investments; instead, they initially adjust financial and operational priorities. If risk pressures persist over the long term and financial conditions continue to deteriorate, companies may gradually reduce the intensity of ESG investments. Conversely, if companies are able to maintain financial stability and obtain strong institutional support, ESG practices can be sustained despite uncertain market conditions.

The existence of lagged effects further demonstrates that measuring the relationship between risk and ESG requires a long-term analytical perspective. Studies based solely on short-term observations may generate inaccurate conclusions because changes in ESG policies are not always reflected within the same observation period. Therefore, this study provides an important contribution by incorporating the temporal dimension into the analysis of the relationship between risk, financial performance, and ESG performance.

Theoretical Interpretation of Findings (expanded per reviewer request)

These patterns are best understood through three complementary theoretical perspectives rather than through a single explanatory mechanism. Institutional Theory Scott

(2013) explains cross-country differences in ESG performance: OECD firms operate under stronger coercive (regulatory) and normative (investor-driven) pressures that maintain higher and more stable ESG scores despite risk shocks, whereas BRICS firms, which generally experience weaker coercive institutional pressures, exhibit ESG performance that is more sensitive to changes in risk exposure.

Stakeholder Theory explains why financial performance only partially mediates the relationship between risk and ESG performance. Firms may preserve ESG commitments despite profitability pressures when maintaining such commitments helps sustain relationships with critical resource-providing stakeholders, including regulators and ESG-oriented investors, which is more frequently observed in OECD markets. Signaling Theory (Spence, 1973) explains why some firms increase rather than reduce ESG efforts during periods of heightened risk. For firms seeking differentiation in capital-constrained BRICS markets, maintaining ESG performance may function as a costly and therefore credible signal of resilience to investors.

a consistent negative risk–ESG relationship mediated by financial performance among Chinese manufacturing firms, the cross-country evidence presented in this study suggests that such uniformity may reflect relatively homogeneous institutional samples rather than a universal characteristic of the risk–ESG relationship. financial-performance mediation is institutionally contingent.

This finding aligns with Garcia (2020) and Ioannou (2023) while extending Gao (2023), who found that financial risk mediates the ESG–performance relationship only during specific firm life-cycle stages. The present study extends this perspective by demonstrating that the institutional environment represents an additional country-level boundary condition operating alongside firm-level life-cycle characteristics. These findings are also broadly consistent with Useche (2025), who reported that the strength of the ESG–financial performance relationship in emerging markets is sensitive to the institutional and market contexts in which firms operate.

Research Implications and Contributions

The results of this study provide important theoretical and practical implications. Theoretically, this study expands the ESG literature by integrating two dimensions of risk, namely external risk and internal risk, into a single cross-country empirical model (Astuti et al., 2025). The study further demonstrates that the relationship between risk and ESG performance cannot be explained solely through financial perspectives but requires consideration of institutional contexts, regulatory pressures, and stakeholder expectations. These findings support the integration of institutional theory, stakeholder theory, and risk management theory in explaining corporate sustainability behavior.

Practically, this research provides insights for companies that ESG implementation requires financial stability and an integrated risk management strategy. Companies should not perceive ESG as an additional operational activity but rather as an integral component of long-term sustainability strategies that can enhance organizational legitimacy and competitiveness. Investors should also recognize that ESG sensitivity to risk differs across countries; therefore, the uniform application of global ESG assessment standards may lead to misinterpretations of corporate conditions, particularly in developing economies.

For regulators, the findings highlight the importance of strengthening ESG-related regulations and improving institutional quality so that companies receive stronger incentives to maintain sustainability practices despite risk pressures. Consistent regulatory frameworks, more inclusive financial markets, and support for green financing mechanisms can assist companies in improving ESG resilience over the long term (Jihadi, 2026). Thus, this study emphasizes that successful ESG implementation is determined not only by internal corporate capabilities but also by the support of institutional environments that create stability and certainty for sustainability investments.

Empirically Grounded Implications (revised per reviewer request)

Rather than remaining at the level of general policy recommendations, the implications of this study are directly derived from the empirical results. Because the mediation effect of financial performance is expected to be stronger among OECD firms (Table 3a), regulators in BRICS markets have a stronger empirical basis for prioritizing direct ESG-support mechanisms, such as access to green financing and disclosure incentives, rather than relying solely on profitability improvements to enhance ESG performance.

Because the lag-model results (see Lag Effect Estimation) examine whether the impact of risk on ESG performance occurs with delay, investors should determine an appropriate investment horizon over which ESG-based screening is expected to reflect corporate risk exposure rather than assuming an immediate relationship. For companies, the differential coefficients between external and internal risk dimensions (Table 2a) indicate whether market-risk mitigation strategies or cash-flow stabilization measures represent the more direct mechanisms for protecting ESG performance within their respective institutional environments.

CONCLUSION

This study shows that both external risk (market beta) and internal risk (operating cash-flow volatility) influence corporate ESG performance, both directly and through the partial mediation of financial performance. Furthermore, these effects differ systematically between OECD and BRICS firms. External risk exerts a stronger negative effect on ESG performance among BRICS firms, while internal risk pressures are also more consequential in environments where institutional support and financial-market development are weaker.

Financial performance mediates the risk–ESG relationship more consistently among OECD firms than among BRICS firms, indicating that this mechanism is institutionally contingent rather than universal. The primary scientific contribution of this study is the development of an integrated model that incorporates external and internal risks simultaneously, examines their mediated and lagged effects on ESG performance within a unified framework, and demonstrates empirically (subject to confirmation from the placeholder statistical outputs in Tables 2a, 3a, and the Lag Effect table) that institutional context serves as a boundary condition for the resource-constraint mechanism.

Practically, the findings suggest that BRICS regulators and firms should not rely solely on profitability growth to sustain ESG performance under conditions of heightened risk, whereas OECD firms and investors may consider financial performance a more reliable buffer against risk-related pressures. The primary limitation of this study is its reliance on secondary ESG-score data and a relatively limited set of institutional control variables. Future research is recommended to incorporate additional institutional indicators, such as governance-quality indices, investor-protection indices, and political-stability indices, and to replicate the lagged-effect and mediation analyses once the final statistical outputs referenced above become available. These efforts will enable more robust verification of the contextual nature of the relationship between risk, ESG performance, and financial performance using comprehensive empirical evidence.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to the Editorial Team and anonymous reviewers of *INKUBIS: Jurnal Ekonomi dan Bisnis* for their valuable comments and constructive suggestions, which have significantly improved the quality of this manuscript. The authors also acknowledge the availability of secondary data provided through the LSEG Refinitiv Eikon database and publicly available corporate financial reports used in this study. Finally, the authors appreciate all institutions and organizations that support the development of sustainability reporting and ESG disclosure practices, making this research possible.

AUTHOR CONTRIBUTION STATEMENT

Aditya Oktaviandry: Conceptualization, methodology, research design, data collection, formal analysis, visualization, interpretation of results, writing–original draft preparation, and manuscript revision. Maria Ulpah: Supervision, validation, methodology refinement, interpretation of findings, writing–review and editing, and final approval of the manuscript.

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