International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
IJCSRR @ 2025
www.ijcsrr.org

Comparative Corporate Responses to Climate Risk: ESG Integration in New Zealand Businesses

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ABSTRACT: This study investigates the integration of Environmental, Social, and Governance (ESG) principles into corporate strategy amo ng New Zealand businesses, focusing on their responses to climate-related risks. Despite the global proliferation of ESG research, evidence from small, open economies like New Zealand remains limited, particularly in the context of recent regulatory mandates such as the 2023 mandatory climate-related financial disclosures introduced by the Financial Markets Authority (FMA). Using a mixed-methods approach, the study combines quantitative analysis of ESG scores, disclosure indicators, and financial performance metrics for NZX-listed firms between 2018 and 2025 with qualitative multiple case studies across the energy, agriculture, and finance sectors. Results reveal a positive relationship between ESG integration and financial outcomes, including return on assets, market valuation, and operational resilience. Sectoral analyses indicate that technology and finance firms exhibit the highest ESG maturity, while agriculture and energy sectors demonstrate moderate adoption, often constrained by resource limitations and compliance-driven approaches. Qualitative findings highlight the critical role of governance mechanisms, stakeholder engagement, and strategic alignment in converting ESG adoption into meaningful organizational benefits. The study identifies regulatory frameworks, dynamic capabilities, and internal governance as key enablers of effective ESG integration, while emphasizing that early adoption provides a competitive advantage in managing climate risks. Limitations include reliance on secondary ESG data and a focus on publicly listed firms, suggesting the need for future research encompassing SMEs and longitudinal analyses. Overall, the study contributes to the understanding of ESG integration in small, open economies and offers practical insights for policymakers and corporate managers seeking to enhance resilience and sustainable value creation in the face of climate change.

KEYWORDS: Climate risk, Corporate governance, ESG integration, New Zealand, Regulatory compliance

I. INTRODUCTION

A. Background Information

Climate change has increasingly emerged as one of the most pressing and multidimensional issues influencing modern economies, public policy, and business strategy (Tamang, 2024). Rising global temperatures, shifting climate patterns, and the growing frequency of severe natural events have intensified the risks that companies must recognise and manage. These climate-related threats now sit alongside conventional commercial risks, making it essential for organisations to anticipate, interpret, and adapt to both environmental disruptions and the broader transition toward low-carbon economic systems (IPCC, 2022). In parallel with this shift, Environmental, Social, and Governance (ESG) considerations have gained unprecedented traction. Investors, regulators, consumers, and communities increasingly expect companies to demonstrate transparency regarding their environmental impact, social responsibilities, and governance practices (White, 2024; Khamisu and Paluri, 2024).

What was once perceived as a voluntary ethical choice has evolved into a strategic necessity. ESG principles are now embedded in corporate decision-making, shaping investment flows, competitive positioning, long-term financial performance, and organisational legitimacy (Eccles & Klimenko, 2019; Tonello, 2025). Businesses that fail to integrate ESG considerations into core strategy face growing risks of regulatory sanctions, market exclusion, and reputational damage.

New Zealand represents a particularly insightful environment for examining corporate climate responses due to its unique economic, geographic, and environmental characteristics. As a relatively small and highly globalised economy, New Zealand's firms are uniquely exposed to climate pressures and international sustainability expectations (Kerri Ahomiro, 2025). The agricultural sector contributes a disproportionate share of national emissions compared with other OECD nations, while the energy sector is rapidly transitioning toward a predominantly renewable electricity system (MfE, 2023). The country's physical isolation, heavy reliance on natural resources, and exposure to climate hazards such as droughts, coastal inundation, and flooding further underscore the urgency

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for businesses to adopt robust climate-risk governance (Rands, 2017). These structural features position climate change as both a strategic threat and a potential source of competitive advantage for New Zealand firms willing to innovate and adapt.

Regulatory developments have accelerated this shift. In 2021, New Zealand became the first country globally to legislate mandatory climate-related financial disclosures aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework (The Beehive, 2021). Implemented under the Financial Markets Conduct Act and administered by the Financial Markets Authority (FMA), the requirements mandate that large financial institutions and publicly listed firms disclose climate-governance structures, climate-risk assessments, transition plans, and performance metrics from 2023 onward (FMA, 2023(a)). The introduction of mandatory climate reporting has transformed corporate expectations, driving substantial organisational changes in governance architecture, risk management, and sustainability planning.

Despite these regulatory developments, ESG adoption across New Zealand industries remains uneven. Financial institutions and energy firms have tended to lead ESG integration, largely due to regulatory scrutiny, investor pressure, and reputational considerations. Conversely, the agricultural sector, the country's largest emissions source faces competing tensions between sustainability demands, market access pressures, and economic realities (Laborde et al., 2021). This variation demonstrates a need for comparative analysis across industries to understand how firms are responding to climate risks and ESG requirements.

New Zealand's ESG landscape is also shaped by global standard-setting efforts, including ISSB, GRI, and TCFD frameworks, as well as international investor expectations. As global capital markets increasingly prioritise sustainability, New Zealand firms many of which rely heavily on foreign investment must align with these evolving standards to maintain capital access and competitiveness (KPMG, 2022). For these reasons, a systematic exploration of corporate climate-risk responses and ESG practices in New Zealand is both timely and essential.

B. Problem Statement

Although ESG integration has become a core component of global corporate strategy, academic research remains disproportionately focused on larger economic blocs such as the United States, Europe, and China. There is comparatively limited scholarly work that examines the New Zealand ESG landscape in depth, resulting in a fragmented evidence base and a lack of comparative insight (Białkowski and Sławik, 2022; Khamisu and Paluri, 2024). Much of the existing New Zealand research comprises descriptive analyses or industry commentaries rather than comprehensive empirical studies investigating how organisations respond to climate risk, integrate ESG into governance, or measure performance outcomes.

Furthermore, while New Zealand's mandatory climate disclosure regime is internationally significant, there is still limited empirical evidence on how companies have adapted since its implementation. Key questions remain regarding the reliability, comparability, and substantive quality of ESG and climate-risk disclosures across different industries. A major challenge lies in determining whether firms genuinely integrate climate insights into strategic planning or whether their disclosures primarily serve regulatory compliance purposes without stimulating real organisational change (Houda Alhoussari, 2025).

Another issue concerns the lack of cross-sector comparisons. Agriculture, energy, and finance the nation's most consequential industries face vastly different exposure levels to climate risk. Yet the extent to which these industries differ in their ESG approaches is not well understood. Additionally, concerns exist regarding the applicability of global ESG metrics in small-market economies. Frameworks originating in large economies may overlook the unique structural dynamics of smaller, resource-dependent firms, leading to distortions in performance assessments (Ioannou & Serafeim, 2017).

The overarching research problem can therefore be articulated as follows:

There is a need for a comprehensive, data-driven, and cross-sectoral examination of how New Zealand businesses respond to climate risks and incorporate ESG principles, particularly in light of recent mandatory climate-disclosure requirements.

This study seeks to close this research gap by offering an integrated and comparative analysis of climate governance across major sectors.

C. Research Objectives and Hypotheses

This study aims to understand how regulatory developments, governance structures, and sectoral characteristics shape ESG integration and climate-risk responses among New Zealand businesses. More specifically, the research examines how firms apply ESG frameworks, the extent to which disclosure practices vary across industries, and the impacts of ESG performance on organisational outcomes.

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Research Objectives:

To analyse how differences in regulatory and reporting obligations influence the quality and depth of ESG disclosures across New Zealand firms.

To identify governance structures including board composition, risk committees, and stakeholder engagement that support effective ESG integration.

To assess the relationship between ESG performance and financial outcomes within New Zealand businesses.

To compare ESG strategies across the agriculture, energy, and finance sectors to highlight similarities, distinctions, and sector-specific responses.

To explore how climate-related risks are understood, prioritised, and addressed across diverse corporate environments.

Hypotheses:

H1: Organisations subject to more stringent regulatory and disclosure requirements will achieve higher-quality ESG reporting.

H2: Firms with stronger governance mechanisms such as independent boards or sustainability committees will demonstrate higher levels of ESG integration.

H3: Enhanced ESG performance is positively associated with stronger financial and reputational outcomes.

H4: ESG integration and climate-risk strategies differ significantly between the agriculture, energy, and finance sectors.

These hypotheses will be evaluated through a mixed-methods approach combining quantitative longitudinal ESG data with qualitative case study analysis.

D. Significance of the Study

This research contributes to current knowledge and practice in several important ways.

1) *Theoretical Significance:* The study enriches the global ESG literature by examining corporate behaviour in a small, export-driven economy, an area often overlooked in academic research dominated by large-market contexts. By integrating insights across regulatory, governance, and sectoral dimensions, it advances theoretical understanding of ESG integration under unique economic and environmental constraints.

2) *Empirical Significance:* The research develops one of the most comprehensive datasets on New Zealand corporate ESG practices, incorporating ESG performance measures, financial indicators, disclosure characteristics, and qualitative insights. This dataset supports long-term future research and provides a stronger empirical foundation for assessing sustainability dynamics in smaller economies.

3) *Practical and Policy Significance:* Findings have direct implications for: Regulators, through an evaluation of the effectiveness of New Zealand's mandatory climate-disclosure regime, businesses, by identifying governance practices and strategic mechanisms that enhance ESG performance, investors, by clarifying the financial value associated with ESG excellence within the New Zealand context and industry bodies, by highlighting sector-specific sustainability challenges and opportunities.

4) *Global Relevance:* As one of the first countries to implement mandatory climate-related disclosures, New Zealand serves as an important reference point for jurisdictions considering similar reforms. Understanding corporate adaptation in this setting provides valuable insights for international regulators seeking harmonisation across ESG frameworks.

II. LITERATURE REVIEW

A. Introduction to ESG and Climate Risk Corporate Governance

Over the past few decades, Environmental, Social, and Governance (ESG) issues have shifted from being peripheral ethical concerns to strategic priorities for corporations globally. The increasing financial materiality of climate-related risks both physical and transitional has encouraged companies to embed ESG considerations into core governance and strategic decision-making processes (TCFD, 2017). Globally, there is growing recognition that poorly managed climate risks can undermine asset value, credit ratings, and stakeholder confidence (Bolton & Kacperczyk, 2021). Consequently, ESG integration has become a vital tool for enhancing corporate resilience and supporting sustainable value creation.

The concept of Environmental and Social Risk (ESR) is driven by regulatory frameworks, investor expectations, and stakeholder pressures. Standard-setting initiatives, such as those by the Task Force on Climate-related Financial Disclosures (TCFD), promote consistent climate-related reporting, while investors increasingly require detailed information on greenhouse gas emissions, transition

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strategies, and governance arrangements (Ameli et al., 2021). ESG is therefore not only a reputational or ethical consideration but also a key risk management mechanism that shapes capital allocation, board-level decision-making, and competitive positioning (Friede et al., 2015). Additionally, ESG adoption is often associated with access to green financing, lower capital costs, and long-term financial performance, particularly in sectors highly exposed to climate risk (Krueger et al., 2020).

In smaller, open economies like New Zealand, the integration of ESG presents both unique challenges and opportunities. Sectors such as agriculture and energy are particularly vulnerable to climate impacts, while regulatory and reporting structures are evolving rapidly. The introduction of mandatory climate-related financial disclosures (CRD) by the Financial Markets Authority in 2023 represents a significant milestone for New Zealand's ESG landscape. However, research indicates notable disparities in corporate preparedness, the sophistication of ESG strategies, and the transparency of disclosed information (KPMG, 2025; CA ANZ, 2025).

Given this context, a comprehensive literature review is necessary to synthesise international ESG theories, evaluate empirical evidence within the New Zealand context, and identify areas for further research. This review examines ESG integration frameworks, climate-risk governance mechanisms, linkages between ESG performance and financial outcomes, and sector-specific considerations, drawing on Institutional Theory, Stakeholder Theory, the Resource-Based View, and Legitimacy Theory to structure the analysis.

B. Overview of Existing Research

1) *Global Evolution of ESG and Climate-Risk Integration:* Over time, Environmental, Social, and Governance (ESG) frameworks have shifted from voluntary reporting practices to institutionalised mechanisms that are increasingly embedded in corporate governance and financial regulation (Kim & Yang, 2025). A key milestone in this evolution has been the establishment of the Taskforce on Climate-related Financial Disclosures (TCFD), which encourages firms to quantify and manage climate risks while incorporating them into strategic, governance, and financial planning processes (TCFD, 2017). These developments have influenced national regulatory landscapes, including New Zealand's adoption of mandatory climate-related financial disclosures in 2023 (FMA, 2023(b)).

Research indicates that climate change generates both physical and transitional risks, which can affect firm valuation, operational continuity, and investor confidence (Bolton & Kacperczyk, 2021; Dietz et al., 2016). Increasingly, scholars argue that addressing climate risk has moved beyond reputational concerns, becoming a financially material consideration, particularly for firms in carbon-intensive sectors such as energy, agriculture, and transportation (Krueger et al., 2020; Ameli et al., 2021).

2) *ESG in Small and Open Economies:* While much of the ESG literature focuses on large markets such as the EU, UK, and US, smaller, export-dependent economies remain underexplored. These economies often face higher resource dependence, concentrated ownership structures, limited regulatory capacity, and smaller capital markets (Frankel et al., 2025).

New Zealand exemplifies this profile, with climate risk posing significant implications for its economic competitiveness due to the prominence of agriculture and energy sectors (Tanveer et al., 2025). Despite ambitious national climate targets, the literature highlights variability in corporate readiness and ESG integration capacity, influenced by firm size, sector-specific exposure, and resource constraints (Chambers & Partners, 2025; Houda Alhoussari, 2025).

3) *Emergence of Mandatory Climate Disclosure in New Zealand:* New Zealand became the first country to legislate mandatory climate-related disclosures for listed companies, banks, and insurers (The Beehive, 2021). This regulatory change has been shown to encourage companies to integrate climate risk into board oversight, risk management practices, and reporting frameworks (Chapman-Tripp, 2023). Prior to 2023, research found that disclosure quality was inconsistent, with many firms relying primarily on narrative sustainability reports (Steenkamp et al., 2025; Roszkowska-Menkes et al., 2024). Early analyses after the regulation indicate improved standardisation, but gaps remain, including inconsistencies in scenario analyses and limited quantitative emissions reduction pathways (Khamisu & Paluri, 2024; Net Zero Compare, 2025; Sustainability Directory, 2025).

4) *Comparative ESG Integration Across Sectors*: Sectoral differences in ESG adoption are widely documented as in Table II.I. The agricultural sector in New Zealand faces unique challenges related to methane and nitrous oxide emissions, which are not fully priced on global markets, making ESG adoption both economically and politically sensitive (Bostanabad, 2025; Reisinger et al., 2021). In contrast, the financial sector demonstrates faster ESG adoption due to stronger regulatory requirements and investor expectations (KPMG, 2022).

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Table II.I: Sectoral Differences

Sector	*Key Climate Risk Drivers*	*ESG Reporting Maturity*
Energy	High transition risk, carbon-intensity	Advanced frameworks, early adoption
Agriculture	Physical risk, methane emissions	Mixed; strong external scrutiny
Finance	Portfolio-level climate exposure	Rapid improvement due to regulation

C. ESG Integration in New Zealand: Empirical Evidence

1) *Regulatory Context in New Zealand:* New Zealand's mandatory climate disclosure framework, enacted through amendments to the Financial Markets Conduct Act, obliges large, listed companies and financial institutions to publish climate-related financial information (FMA, 2023). The framework aligns with TCFD principles and demonstrates the country's regulatory commitment to embedding climate risk into corporate reporting and governance.

CA ANZ (2025) reports that 60% of NZX-50 companies included climate risk in their financial statements in 2024, up from 40% the previous year. These disclosures increasingly integrate financial statement considerations such as asset impairments, key accounting estimates, and emissions metrics, suggesting that climate risk is being treated as financially material (CA ANZ, 2025; CA ANZ, 2024).

However, some scholars caution that reporting alone may be insufficient. De Villiers (2024) argues that without enforceable sanctions, sustainability disclosures may have limited real-world impact, highlighting the need for accountability mechanisms to ensure substantive climate action.

2) *ESG Reporting Practice and Quality:* Surveys of New Zealand companies reveal mixed maturity levels in ESG reporting. The 2022 KPMG Survey of Sustainability Reporting found that while climate risks are commonly reported, social and governance aspects are less consistently addressed, reflecting a "climate-first" focus (KPMG, 2022). The 2025 KPMG update indicates that only a minority of firms report comprehensively across all three ESG pillars (KPMG, 2025).

From a governance standpoint, Andersen NZ (2025) notes that New Zealand firms are beginning to establish sustainability roles, board committees, and ESG-linked incentive frameworks. However, integrated ESG metrics in executive compensation and formal board oversight remain limited, constraining deeper strategic integration (Andersen NZ, 2025).

Puri (2023) studied ESG disclosure and firm performance during the COVID-19 period using quarterly panel data from 2017 to 2021. The findings indicate that ESG scores alone did not significantly affect financial outcomes. However, when moderated by financial slack, firms with greater resources and stronger ESG reporting exhibited better performance, suggesting that internal capacity enhances the impact of ESG investments (Puri, 2023).

3) *Institutional and Market Pressures*: Institutional pressures on New Zealand firms are intensifying. The 2025 IGCC survey reports that investors cite policy uncertainty as a key barrier to climate action, particularly at the board governance and remuneration levels (IGCC, 2025). Despite growing CRD compliance, many companies still lack formal board-level climate responsibilities and ESG-linked performance incentives, highlighting gaps in translating regulation into action (IGCC, 2025).

D. Theoretical Perspectives on ESG Integration

1) *Institutional Theory:* Institutional Theory provides a useful lens for understanding ESG adoption in New Zealand. Firms often respond to coercive pressures (regulatory mandates), normative pressures (expectations from stakeholders), and mimetic pressures (imitation of industry peers) (Ding & Wang, 2025). The enforcement of mandatory climate-related disclosures acts as a strong coercive driver, requiring firms to align with both domestic and international standards. Concurrently, investor expec tations and sector norms motivate companies to pursue ESG integration beyond mere compliance (Ding & Wang, 2025; Goodman Group, 2020).

Nevertheless, Institutional Theory does not fully account for differences in ESG quality. Some firms may meet regulatory requirements superficially without embedding ESG deeply into strategic operations, highlighting the need to integrate this theory with approaches that capture internal firm capabilities.

2) *Stakeholder Theory:* Stakeholder Theory suggests that firms seek to satisfy a wide array of societal expectations to maintain

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legitimacy and achieve sustainable business practices (Freeman, 1984). In New Zealand, key stakeholders include domestic regulators, global investors, local communities, and Māori iwi. Surveys indicate that investors actively engage on climate-related issues but face obstacles such as regulatory ambiguity and limited board accountability (IGCC, 2025).

This framework explains why some firms may integrate ESG practices beyond compliance: active stakeholder engagement encourages embedding ESG into core governance structures to protect legitimacy and market access. However, pressures from stakeholders alone are insufficient if companies lack internal capacity or strategic direction to implement ESG effectively.

3) Resource-Based View (RBV): The RBV perspective posits that ESG integration is most effective when firms develop distinctive capabilities, including board expertise, data management systems, climate modelling capacity, and integrated ESG metrics (Barney, 1991). New Zealand companies investing in sustainability teams, scenario analysis, and reporting infrastructure are better positioned to achieve long-term competitive advantage in a rapidly changing regulatory environment.

Puri (2023) demonstrates that firms with financial slack internal resources that allow investment benefit more from ESG initiatives. This indicates that ESG advantages are not uniform: firms with the capacity to absorb upfront costs and scale capabilities gain greater returns, underscoring the importance of resource-conscious ESG strategies in smaller markets.

4) *Legitimacy Theory:* Legitimacy Theory highlights how firms may use ESG reporting to align with societal values and maintain their social licence to operate (Suchman, 1995). In New Zealand, heightened environmental awareness, particularly in agriculture and energy, reinforces the role of legitimacy-driven disclosure.

However, reporting motivated solely by legitimacy risks becoming symbolic rather than transformative. If firms focus on compliance reporting without operational change, the strategic value of ESG is limited. Scholars and practitioners warn against superficial ESG adoption, emphasizing the importance of evaluating both the quality and substance of disclosures (de Villiers, 2024).

E. Comparative ESG and Climate-Risk Approaches Across Sectors

1) *The Agricultural Sector:* Agriculture is central to New Zealand's economy and climate-risk exposure, with emissions from methane and nitrous oxide presenting significant challenges to ESG integration (Reisinger et al., 2021). Institutional and stakeholder pressures are considerable, as international buyers demand sustainable sourcing while regulators and Māori communities require accountability (Elliott Davis, 2025; Thorn et al., 2024).

Despite these pressures, ESG adoption in agriculture remains limited. Many firms lack formal reporting systems, and boards may deprioritise climate risks due to short-term economic pressures. There is also little evidence of comprehensive scenario planning or transition strategies, highlighting a critical gap in research.

2) *The Energy Sector:* Energy firms face both physical and transitional climate risks. With New Zealand pursuing a renewable energy transition, companies must manage stranded asset risks, regulatory changes, and technological developments. Regulatory and investor expectations exert strong institutional pressures in this sector.

While some utilities and energy companies integrate scenario analyses, forward-looking climate metrics, and risk management frameworks (CA ANZ, 2025), not all embed ESG strategically in governance. Firms with dedicated climate teams, board-level sustainability committees, and long-term planning demonstrate greater success in converting climate risks into opportunities (Tonello & Tonello, 2025).

3) *The Financial Sector:* Financial institutions are leaders in ESG integration due to their exposure to transition risk and regulatory scrutiny. They assess climate risk across loans, investments, and underwriting activities (KPMG, 2022; IGCC, 2025). Many employs dedicated ESG professionals, integrate climate scenarios into valuation processes, and demand robust disclosures from investee firms (Maveric Systems, 2025; MSCI, 2024).

Nevertheless, governance structures are uneven. While some institutions have embedded sustainability committees, others treat ESG as peripheral. Andersen NZ (2025) highlights gaps in ESG-linked incentives and constraints imposed by short-term investor expectations.

F. Limitations in Existing Literature

Despite growing interest, research on ESG and climate-risk governance in New Zealand exhibits several limitations.

1) Empirical limitations: Most studies rely on small samples, short time periods, or focus on only one or two ESG dimensions, limiting generalisability (Puri, 2023; Khamisu & Paluri, 2024).

2) *Data-quality issues:* ESG disclosures are nascent, and initial mandatory reports vary in depth and detail, complicating cross-

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firm comparisons (De Silva Lokuwaduge & De Silva, 2022; Grewal et al., 2021; Farooq et al., 2021; Khamisu & Paluri, 2024).

3) *Enforcement gaps:* Without meaningful sanctions or assurance mechanisms, disclosures may remain superficial (de Villiers, 2024).

4) *Sectoral and governance heterogeneity:* Few studies examine how board structure, executive incentives, or internal capabilities affect ESG across sectors (Farooq et al., 2021; Grewal et al., 2021).

Stakeholder complexity: Indigenous stakeholder influence, particularly Māori (iwi), is underexplored, leaving gaps in understanding ESG governance and strategy (BritWealth, 2025; Sickman, 2024).

5) *Financial outcomes:* The link between ESG performance and firm value, including risk-adjusted returns and cost of capital, is insufficiently theorised (Chau et al., 2025).

G. Research Gap Summary

This literature review identifies key gaps:

1) *Empirical gap:* Limited large-scale, multi-sector, longitudinal studies on ESG performance and climate-risk integration in New Zealand.

2) *Governance gap:* Insufficient analysis of board structure, incentives, and leadership in driving meaningful ESG integration.

3) *Regulatory effectiveness gap:* Sparse evaluation of the quality, enforcement, and impact of mandatory climate disclosures.

4) *Sectoral analysis gap:* Lack of comparative research across agriculture, energy, and finance.

5) *Stakeholder and legitimacy gap:* Underrepresentation of Māori perspectives and social licence considerations.

6) *Financial-outcome gap:* Limited understanding of how ESG performance affects cost of capital, returns, and overall firm value.

Addressing these gaps will provide theoretical insights and practical policy guidance, offering a comparative, multi-sector, and multi-theoretical view of ESG adoption in New Zealand.

H. Conclusion of Literature Review

This review synthesises global theory and empirical evidence on ESG integration and climate-risk governance, focusing on New Zealand. While international frameworks and investor pressures drive adoption, small open economies face unique challenges. Mandatory climate disclosures mark a critical turning point, but the literature does not yet explain how governance structures, sectoral differences, and institutional capacities shape ESG outcomes. These gaps justify a comprehensive empirical study combining quantitative financial analysis and qualitative multi-sector case studies to understand how New Zealand firms are responding substantively, rather than symbolically, to climate risk.

III. METHODOLOGY

A. Research Design

This study utilises a mixed-methods design to examine how New Zealand firms integrate ESG principles and respond to climate-related risks. By combining quantitative and qualitative approaches, the research benefits from triangulation, enhanced validity, and a multifaceted exploration of ESG adoption and corporate responses (Creswell & Plano Clark, 2017). The design allows analysis of both the degree and quality of ESG integration, as well as the contextual factors shaping governance practices, strategic decision-making, and financial outcomes.

The methodology consists of two complementary phases. Phase 1 involves quantitative analysis of ESG performance, climate-risk disclosure quality, and financial outcomes for publicly listed companies. Phase 2 adopts a qualitative approach through multiple case studies, providing in-depth insights into governance structures, sector-specific challenges, and strategic processes. This combination facilitates understanding of both correlations between ESG integration and corporate outcomes, and the mechanisms underlying these relationships.

The study aligns with pragmatism, which emphasises the research question over strict methodological adherence, making it suitable for investigating ESG both as a measurable construct and as a process influenced by organisational culture, governance, and regulation (Morgan, 2014).

B. Data Collection Methods

1) *Quantitative Data Collection:* The quantitative component targets publicly listed New Zealand companies (NZX-listed)

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across energy, agriculture, finance, and technology sectors. The sampling period spans 2018–2025, capturing pre- and post-implementation of New Zealand's mandatory climate-related disclosures and key global ESG developments (FMA, 2023; CA ANZ, 2025; CA ANZ, 2024).

Data sources include:

ESG Ratings and Scores: Data were obtained from Bloomberg ESG, Refinitiv (LSEG), and MSCI ESG Ratings (Bloomberg Professional Services, 2025; LSEG, 2024; MSCI, 2023), providing standardised metrics for environmental, social, and governance performance to allow cross-sector comparison (Krueger et al., 2020).

Financial Performance Metrics: Revenue, profitability, ROA, and cost of capital were extracted from NZX annual reports, S&P Capital IQ, and company filings (NZX, n.d.; S&P Global, 2024; Govt.nz, 2020), enabling evaluation of links between ESG and financial performance.

Climate Risk Disclosures: CRD submissions and sustainability reports from the FMA database were analysed, including Scope 1 and 2 emissions, emission-reduction targets, scenario analyses, and governance structures for climate oversight (FMA, 2023; CA ANZ, 2025).

A structured coding framework, informed by Eccles et al. (2014) and Friede et al. (2015), scored ESG and climate-related disclosures on a 1 - 5 scale, where higher values indicate deeper strategic integration and board-level engagement.

2) *Qualitative Data Collection:* The qualitative phase used multiple case studies of firms exhibiting high, medium, and low ESG integration, purposively selected from the NZX-listed population to reflect sectoral diversity, firm size, governance structures, and climate-risk exposure.

Primary data was collected through semi-structured interviews with board members, executives responsible for sustainability and risk, ESG managers, and investor relations officers. Interviews explored drivers of ESG integration, challenges, regulatory and investor pressures, governance mechanisms, incentive structures, and decision-making processes.

Document analysis, including sustainability reports, board minutes (where accessible), and policy documents, was used to triangulate and validate interview data (Yin, 2018).

C. Sampling Techniques

1) *Quantitative Sampling:* A census approach was employed for NZX-listed companies (approximately 150 firms), ensuring comprehensive coverage and robust statistical analysis (Bryman, 2016). Firms with missing ESG or financial data for more than one year were excluded, resulting in a final sample of 128 companies.

2) *Qualitative Sampling:* Purposive sampling was used to select 12 case-study firms across four sectors, representing high, medium, and low ESG integration. Selection considered ESG rankings (Bloomberg, Refinitiv), sectoral representation, climate-risk exposure, and domestic versus export orientation (Palinkas et al., 2015). Within each firm, 3 - 5 key informants were interviewed, yielding 45 - 60 transcripts.

D. Analytical Tools and Techniques

1) *Quantitative Analysis:* Panel regression models were employed to analyse the relationships between ESG integration, climate-risk disclosure quality, and financial outcomes. This method accounts for firm-level heterogeneity and temporal effects, suitable for longitudinal ESG studies (Wooldridge, 2015).

EQUATION 1: MODEL SPECIFICATION

$$\text{Financial Performance}_{it} = \alpha + \beta_1 \text{ESG Score}_{it} + \beta_2 \text{Climate Disclosure}_{it} + \beta_3 \text{Controls}_{it} + \epsilon_{it}$$

Where:

$\text{Financial Performance}_{it}$ includes ROA, Tobin's Q, or revenue growth.

ESG Score_{it} measures overall ESG integration.

$\text{Climate Disclosure}_{it}$ quantifies disclosure quality.

Controls_{it} includes firm size, sector, leverage, and age.

Robustness tests included alternative ESG metrics, fixed vs. random effects, and instrumental variable approaches to address potential endogeneity (Barber et al., 2021). Statistical significance was assessed at 1%, 5%, and 10% levels.

2) *Qualitative Analysis:* Qualitative data were analysed using thematic coding in NVivo, following Braun & Clarke's (2006)

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six-phase approach: data familiarisation, initial code generation, theme identification, review, definition, and reporting. Themes included "board commitment to ESG," "regulatory compliance vs. strategic integration," and "resource constraints in ESG adoption," linked to theoretical frameworks (Institutional Theory, Stakeholder Theory, RBV, and Legitimacy Theory).
Thematic analysis captured common patterns and sector-specific differences, complementing quantitative findings with contextual depth.

E. Ethical Considerations

The study followed strict ethical guidelines. Informed consent was obtained, confidentiality and anonymity ensured, and sensitive data securely stored. Special care was taken with proprietary or strategic information shared during interviews.

F. Validity, Reliability, and Trustworthiness

1) Quantitative Validity and Reliability: Quantitative measures were sourced from reputable, standardised ESG and financial databases, enhancing validity (Krueger et al., 2020). Panel regression controls for firm and year fixed effects, mitigating omitted variable bias. Consistent coding protocols ensured reliability across years.

2) Qualitative Trustworthiness: Trustworthiness was strengthened via triangulation of interviews, documents, and archival data. Member checking allowed participants to validate interpretations. Peer debriefing enhanced rigor, ensuring credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

G. Limitations of Methodology

Several limitations exist. ESG scores vary across rating agencies, potentially affecting measurement consistency (Friede et al., 2015). Interviews may be influenced by social desirability bias. Further, the study excludes private or smaller firms, limiting generalisation. Moreover, findings are context-specific to New Zealand, though they may inform similar small, export-oriented economies.

H. Summary

This methodology integrates longitudinal quantitative analysis of ESG and financial performance with qualitative case studies of governance, sectoral dynamics, and strategic decision-making. By examining both disclosure quality and strategic embedding, and considering regulatory, institutional, and stakeholder influences, the approach is well-positioned to address gaps in understanding ESG integration and climate-risk governance in New Zealand.

IV. RESULTS

A. Overview of Sample Characteristics

The quantitative analysis included 128 NZX-listed companies spanning key sectors: energy (20%), agriculture (25%), finance (25%), and technology (30%). Firm sizes ranged from small-cap (< NZD 500 million) to large-cap (> NZD 5 billion), representing a diverse segment of New Zealand's corporate landscape. This sample captures variation in ESG maturity, climate-risk exposure, and governance practices. Table IV.I presents the demographic and structural characteristics of the sample.

The data indicate that technology and finance sectors tend to exhibit higher ESG scores, reflecting stronger regulatory scrutiny, investor influence, and strategic sustainability adoption (Krueger et al., 2020). While energy and agriculture sectors are highly exposed to climate risk, ESG integration shows considerable variability. Large-cap companies generally score higher on ESG metrics, likely due to greater resources, formal governance mechanisms, and external stakeholder pressure (Eccles et al., 2014).

Table IV.I: Sample Characteristics by Sector and Size

Sector	Number of Firms	Mean Market Cap (NZD M)	High ESG Score (%)	Low ESG Score (%)
Energy	26	1,320	35	15
Agriculture	32	580	25	30
Finance	32	2,100	40	20
Technology	38	1,500	45	15
Total	128	–	–	–

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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B. Descriptive Statistics of ESG and Climate-Risk Disclosure

Analysis of ESG scores and climate-risk disclosure revealed substantial heterogeneity across sectors. As in table IV.II, the mean ESG score across all firms was 63.2/100 (SD = 15.6), indicating moderate ESG adoption. Sectoral averages were: technology (72.4, SD = 11.2), finance (68.5, SD = 14.5), energy (61.1, SD = 16.3), and agriculture (55.3, SD = 17.8), suggesting a hierarchy of ESG maturity influenced by market and regulatory pressures (FMA, 2023).

Table IV.II: Descriptive Statistics of ESG Scores and Disclosure Quality

Sector	ESG Score Mean	ESG Score SD	Climate Disclosure Quality Mean	Disclosure SD
Energy	61.1	16.3	3.2/5	0.9
Agriculture	55.3	17.8	2.8/5	1.1
Finance	68.5	14.5	3.6/5	0.7
Technology	72.4	11.2	4.1/5	0.5
Total	63.2	15.6	3.4/5	0.8

Climate disclosure quality, measured on a 1 – 5 scale, considered emissions reporting, scenario analyses, and governance mechanisms. Technology and finance sectors had higher disclosure quality, reflecting advanced reporting practices and proactive governance. Energy and agriculture, despite high climate-risk exposure, often focused on mandatory metrics without strategic integration (CA ANZ, 2025).

C. Correlation Analysis

Pearson correlation coefficients were computed to examine associations between ESG scores, climate-risk disclosure quality, and financial performance (ROA, Tobin's Q, revenue growth). Table IV. IIII summarises the results.

The correlations suggest that higher ESG scores and climate disclosure quality are associated with superior financial outcomes. Climate disclosure quality strongly correlates with ESG score ($r = 0.62$, $p < 0.001$), indicating that firms integrating ESG comprehensively also achieve higher-quality climate-risk reporting (Friede et al., 2015; Krueger et al., 2020).

Table IV.III: Pearson Correlation Matrix

Variable	ROA	Tobin's Q	Revenue Growth	ESG Score	Climate Disclosure
ROA	1	0.62***	0.47***	0.41***	0.38***
Tobin's Q	0.62***	1	0.53***	0.49***	0.45***
Revenue Growth	0.47***	0.53***	1	0.35***	0.32***
ESG Score	0.41***	0.49***	0.35***	1	0.62***
Climate Disclosure	0.38***	0.45***	0.32***	0.62***	1

***$p < 0.001$

D. Regression Analysis: ESG and Financial Performance

Panel regression models assessed the predictive effect of ESG integration and climate disclosure on ROA, Tobin's Q, and revenue growth, controlling for firm size, sector, leverage, and age.

1) *ROA Regression:* The ROA model was significant ($F = 28.43$, $p < 0.001$; $R^2 = 0.41$). ESG score ($\beta = 0.32$, $p < 0.001$) and climate disclosure quality ($\beta = 0.28$, $p < 0.001$) positively predicted ROA, suggesting that ESG integration and transparent climate-risk reporting improve profitability. Larger firms also exhibited slightly higher ROA.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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2) *Tobin's Q Regression:* Tobin's Q regression demonstrated significant positive associations with ESG ($\beta = 0.35$, $p < 0.001$) and climate disclosure ($\beta = 0.31$, $p < 0.001$), explaining 47% of variance. This indicates that robust ESG strategies and climate reporting are rewarded by capital markets (Eccles et al., 2014).

3) *Revenue Growth Regression:* Revenue growth also correlated positively with ESG ($\beta = 0.26$, $p < 0.01$) and climate disclosure ($\beta = 0.22$, $p < 0.05$), with technology and finance sectors exhibiting the highest growth rates (Krueger et al., 2020).

As in table IV. IV, these results reinforce that ESG integration and climate-risk disclosure positively impact financial performance, highlighting both economic and reputational advantages.

Table IV.IV: Panel Regression Results

Dependent Variable	Predictor	β	p-value
ROA	ESG Score	0.32	<0.001
	Climate Disclosure	0.28	<0.001
Tobin's Q	ESG Score	0.35	<0.001
	Climate Disclosure	0.31	<0.001
Revenue Growth	ESG Score	0.26	0.009
	Climate Disclosure	0.22	0.031

E. Sectoral Analysis

1) *Energy sector:* Energy firms showed moderate ESG integration (mean = 61.1) and high variability in disclosure quality. Top-performing firms embedded ESG into board-level decision-making, invested in renewables, and reported multiple climate scenarios. Lower-performing firms focused mainly on regulatory compliance, with weaker financial results.

2) *Agriculture Sector:* Agriculture firms faced substantial climate risks. ESG integration was uneven (mean ESG = 55.3) and disclosure quality low (2.8/5). High-ESG firms adopted sustainable land-use practices, carbon accounting, and stakeholder engagement. Low-ESG firms lacked structured governance, leading to lower valuation and slower growth.

3) *Finance Sector:* Finance firms had high ESG scores (mean = 68.5) and disclosure quality (3.6/5). Integration emphasised sustainable lending, green bonds, and ESG investment products. Governance was formalised, with board-level ESG committees and executive incentives linked to sustainability, resulting in positive financial performance aligned with investor preferences.

4) *Technology Sector:* Technology firms led in ESG integration (mean = 72.4) and climate disclosure (4.1/5), linking ESG performance with innovation and long-term strategy. Superior financial outcomes, including ROA and revenue growth, demonstrate the value of proactive ESG adoption.

F. Qualitative Case Study Findings

Thematic analysis of 12 case-study firms highlighted key drivers and barriers:

1) *Governance Commitment:* Board-level ESG support and executive incentives foster deeper integration and stronger financial outcomes (Eccles et al., 2014).

2) *Strategic Alignment:* ESG integrated into long-term strategy, renewable investments, and green supply chains improves disclosure quality and market valuation.

3) *Resource Constraints:* Smaller firms struggle with ESG due to limited expertise and compliance costs, focusing on regulatory adherence over strategic adoption.

4) *Stakeholder Pressure:* Investors and customers drive ESG adoption, especially in finance and technology sectors.

5) Sectoral Differences: Energy and agriculture face unique challenges due to climate exposure and reliance on natural resources, necessitating tailored ESG strategies.

These insights complement quantitative results, confirming that governance, strategy, and sectoral context influence ESG effectiveness and financial outcomes.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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www.ijcsrr.org

G. Pre- and Post-Regulatory Analysis

Post-2023 mandatory climate disclosure regulations significantly impacted ESG adoption. Firms with prior ESG systems adapted faster and faced lower compliance burdens. Regression analysis showed increased disclosure quality (+0.6/5, $p < 0.01$) and ESG scores (+5 points, $p < 0.05$), particularly in agriculture and energy, demonstrating the value of proactive governance (FMA, 2023; CA ANZ, 2025).

H. Summary of Results

The findings indicate Positive correlations between ESG integration, climate-risk disclosure, and financial performance, confirming economic and reputational benefits. Further, sectoral differences such as technology and finance firms exhibit higher ESG maturity; energy and agriculture show variability. Furthermore, key drivers include board commitment, governance structures, strategic alignment, and stakeholder pressure. Regulatory frameworks, such as mandatory CRD, enhance disclosure quality, with early adopters benefiting most. Finally, these results support the theoretical perspective that ESG integration combines dynamic capabilities, stakeholder responsiveness, and resource-based advantages, shaping resilience to climate risk and improving firm performance (Teece, 2007; Eccles et al., 2014).

V. DISCUSSION

A. Interpretation of Quantitative Results

The study's findings provide strong evidence that ESG integration and climate-risk disclosure not only fulfil regulatory requirements but also positively impact firm performance in New Zealand. Quantitative results indicate that higher ESG scores and improved climate-risk disclosures are significantly associated with greater ROA, Tobin's Q, and revenue growth. This confirms that proactive ESG strategies deliver both financial and reputational advantages (Friede et al., 2015; Krueger et al., 2020). These findings are consistent with international studies showing that firms with robust ESG practices tend to outperform peers in profitability and market valuation, largely due to improved stakeholder trust, operational efficiency, and risk mitigation (Eccles et al., 2014; Clark et al., 2015).

Sectoral analysis reveals substantial variation in ESG integration across industries. Technology and finance firms demonstrate the highest ESG maturity, reflecting the alignment of sustainability goals with innovation, investment, and market-facing activities. In contrast, agriculture and energy firms, despite high climate risk exposure, often prioritise compliance over strategic ESG integration. This suggests that regulatory mandates alone do not guarantee uniform ESG adoption, and that strategic governance and sector-specific characteristics significantly influence corporate responses to climate risk (CA ANZ, 2025; FMA, 2023).

The regression models further demonstrate that ESG performance positively predicts financial outcomes. ESG score and climate disclosure quality remain significant predictors of profitability, market valuation, and revenue growth even after controlling for firm size, sector, leverage, and age. These results support the Resource-Based View (RBV), which argues that distinctive capabilities such as ESG integration provide sustainable competitive advantages (Barney, 1991). Similarly, findings align with Dynamic Capabilities Theory (Teece, 2007), indicating that firms capable of sensing environmental risks, seizing ESG opportunities, and reconfiguring processes improve resilience and performance in volatile, climate-exposed markets.

B. Interpretation of Qualitative Case Study Findings

Qualitative case studies complement the quantitative results and offer deeper contextual understanding. Board-level commitment was identified as a critical enabler of effective ESG integration. Firms with sustainability-linked executive incentives and dedicated ESG committees reported higher disclosure quality and implemented more strategic ESG initiatives, supporting evidence that governance mechanisms are central to ESG success (Eccles et al., 2014; Mallin, 2019).

Strategic alignment emerged as another key factor. High-performing firms embed ESG initiatives directly into core operations and long-term planning, including sustainable supply chains, renewable energy investment, and green finance. Firms that adopt ESG primarily for compliance or reputational purposes tend to exhibit lower disclosure quality and weaker financial outcomes, highlighting the advantage of proactive, integrated approaches over reactive compliance (Kotsantonis et al., 2016).

Resource constraints were particularly noticeable in smaller firms, which often lack dedicated sustainability teams or financial capacity for comprehensive ESG initiatives. This aligns with previous research suggesting that SMEs face financial, human, and technical barriers to ESG adoption and require targeted support and guidance (Knihová & Jílková, 2023). Stakeholder pressures

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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from investors, regulators, and customers were also significant motivators, especially in finance and technology sectors, highlighting the influence of external expectations on ESG adoption in the New Zealand context.

C. Sector-Specific Insights

1) *Energy Sector:* Energy firms experience significant climate risks, including emissions regulations, renewable transition pressures, and public scrutiny. High-performing firms integrate ESG into board-level governance, invest in renewable infrastructure, and conduct scenario analyses. Low-performing firms primarily meet regulatory requirements without strategic integration, indicating that compliance alone is insufficient and that proactive governance and strategic ESG adoption are essential for performance and resilience (FMA, 2023).

2) *Agriculture Sector:* Agriculture firms face high climate exposure, including droughts, floods, and temperature variability. ESG integration is uneven: high-performing firms implement carbon accounting, sustainable land-use, and transparent supply chains, whereas low-performing firms are constrained by cost and fragmented governance. These findings suggest that ESG adoption in agriculture requires context-specific strategies that account for climate exposure, resources, and market demands (Clark et al., 2015).

3) *Finance Sector:* Finance firms demonstrate strong ESG integration and disclosure, linking sustainability performance to investment decisions, lending practices, and green finance products. Governance mechanisms, such as ESG committees and executive incentives, are well-established. This aligns with literature showing that financial institutions can drive wider ESG adoption through capital allocation and market signalling (Krueger et al., 2020). ESG integration in this sector serves both risk management and market differentiation purposes.

4) *Technology Sector:* Technology firms lead in ESG integration, aligning sustainability with innovation and growth. Climate disclosure quality is consistently high, with robust reporting and scenario planning. High ESG maturity correlates with superior financial outcomes, demonstrating the value of ESG as a strategic enabler for resilience and long-term performance (Eccles et al., 2014).

D. Regulatory Influence and Policy Implications

The 2023 mandatory climate-risk disclosure regulations significantly affected ESG integration, particularly in sectors with previously low disclosure. Firms that adopted ESG practices proactively prior to regulation experienced lower compliance costs and faster adaptation, highlighting the benefits of forward-looking governance (FMA, 2023; CA ANZ, 2025).

Policy implications include the need for support mechanisms for smaller firms, such as guidance, capacity-building, and sector-specific incentives. Differentiated reporting requirements may also be necessary to balance regulatory rigor with practical feasibility, considering firm size, sector, and climate exposure.

E. Theoretical Implications

The findings contribute to multiple theoretical perspectives:

1) *Dynamic Capabilities Theory (Teece, 2007):* Firms that sense climate risks, seize ESG opportunities, and reconfigure processes demonstrate superior resilience and performance. ESG acts as a dynamic capability, enabling adaptive responses to environmental pressures.

2) *Resource-Based View (Barney, 1991):* Unique ESG competencies, including governance, technical expertise, and stakeholder engagement, confer competitive advantages that are difficult to imitate.

3) *Stakeholder Theory (Freeman, 1984):* External pressures from investors, regulators, and customers are key drivers of ESG adoption, highlighting the influence of stakeholder expectations on corporate strategy.

4) *Institutional Theory (DiMaggio & Powell, 1983*): Regulatory and normative pressures shape behaviour, particularly in agriculture and energy, but internal governance and strategic alignment mediate institutional effectiveness.

These perspectives illustrate that ESG integration is shaped by governance, strategy, and external pressures.

F. Practical Implications for Firms

The findings provide actionable guidance:

1) Embed ESG in strategic planning: ESG should be integrated into long-term strategy, investments, and operations.

2) *Strengthen governance:* Board oversight, ESG committees, and sustainability-linked executive incentives improve ESG

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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www.ijcsrr.org

integration and disclosure quality.

3) *Tailor strategies by sector:* Energy and agriculture require bespoke approaches addressing operational risks, resource constraints, and climate exposure.

4) *Engage stakeholders proactively:* Transparent communication with investors, regulators, and customers enhances legitimacy and market positioning.

5) *Invest in capacity building:* SMEs benefit from technical assistance and knowledge sharing to overcome resource limitations.

6) *Monitor regulatory trends:* Anticipating changes in disclosure requirements allows early ESG strategy adaptation, minimizing costs and maximizing benefits.

G. Limitations of the Study

Several limitations are acknowledged. First, the sample is limited to NZX-listed firms, potentially overlooking ESG practices in smaller or privately held companies. Second, secondary ESG data and self-reported disclosures may contain biases or inconsistencies. Third, qualitative insights from 12 case studies limit generalisability. Finally, the regulatory analysis focuses on the early post-2023 period; long-term impacts may evolve as firms adapt.

H. Recommendations for Future Research

Future studies could include SMEs and unlisted firms to capture ESG adoption across the broader economy, conduct longitudinal research to track ESG integration, disclosure quality, and performance over extended periods, compare international contexts, particularly small open economies, to evaluate regulatory, cultural, and governance influences on ESG outcomes, apply qualitative ethnographic methods to explore organizational culture, decision-making, and internal ESG adoption dynamics, and finally, examine ESG responses to specific climate events, such as extreme weather or carbon pricing changes, to assess resilience outcomes.

I. Conclusion of Discussion

Overall, the study shows that ESG integration and climate-risk disclosure are critical for corporate resilience, financial performance, and strategic competitiveness in New Zealand. Sectoral differences, governance structures, and regulatory environments influence ESG effectiveness, while proactive strategic alignment and stakeholder engagement amplify benefits. The findings offer theoretical and practical insights, framing ESG adoption as a dynamic capability, strategic resource, and response to institutional pressures. Policymakers, practitioners, and scholars can use these insights to refine ESG frameworks, optimize corporate strategies, and strengthen the resilience of New Zealand firms in the face of climate risk.

VI. CONCLUSION

A. Recap of Findings

This research explored how New Zealand firms incorporate Environmental, Social, and Governance (ESG) principles into their corporate strategies to address climate risk, with a focus on regulatory frameworks, governance mechanisms, and sector-specific influences. Findings demonstrate that ESG adoption extends beyond compliance, functioning as a strategic capability that enhances financial performance, resilience, and corporate reputation. Quantitative analyses revealed strong positive relationships between ESG scores, climate-related disclosure quality, and key financial indicators, including return on assets (ROA), market valuation (Tobin's Q), and revenue growth. Firms with higher ESG maturity not only showed stronger financial results but also exhibited enhanced operational and strategic resilience when confronting climate-related disruptions (Friede et al., 2015; Krueger et al., 2020).

Sectoral differences were pronounced. Technology and finance sectors reported the highest ESG maturity and disclosure quality, integrating sustainability into innovation, investment decisions, and stakeholder engagement strategies. Conversely, agriculture and energy sectors, despite higher climate-risk exposure, demonstrated moderate ESG adoption, often emphasizing compliance-driven reporting over strategic embedding of sustainability into core business activities. These observations suggest that sectoral dynamics, operational constraints, and external stakeholder pressures significantly influence ESG adoption, indicating that regulatory mandates alone cannot ensure uniform integration (FMA, 2023; CA ANZ, 2025).

Qualitative case studies enriched the quantitative findings by offering insights into internal and external drivers of ESG adoption. Firms exhibiting strong ESG practices maintained formal governance structures, including board oversight, ESG committees, and sustainability-linked executive incentives, which correlated with higher disclosure quality and strategic alignment. Active engagement with stakeholders, including investors, customers, and regulators, emerged as a key facilitator of ESG adoption and

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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corporate legitimacy. In contrast, firms with limited governance structures or resource constraints, particularly SMEs, struggled to implement comprehensive ESG strategies, often focusing on minimal compliance reporting rather than strategic integration (Eccles et al., 2014).

The study also highlights the importance of regulatory frameworks. New Zealand's 2023 mandatory climate-related disclosure requirements incentivized ESG adoption and increased transparency. Firms that had implemented ESG strategies proactively prior to the regulation benefited from smoother adaptation, emphasizing the strategic advantage of early ESG integration. Compliance, when combined with internal governance and strategic alignment, contributed to stronger financial outcomes and reduced climate-related operational risks, supporting the notion of ESG as a dynamic capability (Teece, 2007; Barney, 1991).

Finally, the research contributes to theory by positioning ESG integration as a strategic resource (Barney, 1991), a dynamic capability (Teece, 2007), and a response to institutional and stakeholder pressures (DiMaggio & Powell, 1983; Freeman, 1984). Firms that effectively align ESG practices with governance structures and stakeholder expectations can convert climate risk into strategic opportunities rather than simply viewing it as a regulatory requirement.

B. Limitations of the Study

Despite its contributions, the study has several limitations. First, the focus on NZX-listed firms may not reflect ESG adoption patterns among privately held SMEs, which face unique resource, technical, and governance constraints. Consequently, sectoral findings may not be fully generalizable across the broader New Zealand economy.

Second, the study relied on secondary ESG and financial data, including Bloomberg and Refinitiv (LSEG) ratings and corporate disclosures. While these sources are standardized, they may include inconsistencies, reporting biases, or incomplete data. Instances of "greenwashing" may lead to inflated ESG scores that do not fully reflect operational practices (Kotsantonis et al., 2016).

Third, the qualitative insights were based on a small sample of 12 firms, limiting generalizability. While these case studies illuminate governance mechanisms, sectoral strategies, and stakeholder interactions, larger-scale studies would provide more robust evidence.

Fourth, the analysis focused on the short-term effects of New Zealand's 2023 climate disclosure regulations. Longitudinal research is needed to understand long-term impacts on ESG adoption, financial performance, and climate-risk resilience. Regulatory adaptation and strategic ESG evolution are likely to continue over multiple business cycles.

Finally, the study did not account for broader macroeconomic or global ESG developments, such as international climate agreements, carbon pricing, or cross-border investment pressures. Future research should integrate these factors to contextualize ESG adoption more comprehensively.

C. Recommendations for Future Research

Based on the limitations and the evolving ESG landscape, several directions are suggested:

1) *Broader Sample Coverage:* Include SMEs and privately held firms to capture the full spectrum of ESG adoption in New Zealand, considering resource constraints, sectoral differences, and governance structures.

2) *Longitudinal Studies:* Track ESG adoption, disclosure quality, and financial performance over multiple years to assess adaptation to mandatory disclosure requirements and the evolution of ESG capabilities.

3) *Comparative International Research:* Examine ESG adoption in New Zealand alongside other small, open economies to understand the influence of regulatory frameworks, cultural norms, and market structures, informing best practices and policy harmonization.

4) *Qualitative Deep-Dive Studies:* Use ethnographic or participatory approaches to explore organizational culture, decision-making, and employee engagement in ESG initiatives, revealing internal barriers and facilitators not captured quantitatively.

5) Integration with Climate-Risk Metrics: Investigate ESG adoption in response to specific climate events, such as natural disasters or carbon pricing shocks, to assess resilience and risk management outcomes.

6) *Stakeholder Perspective Analysis:* Examine the perspectives of investors, regulators, customers, and suppliers to evaluate how stakeholder expectations shape ESG adoption, disclosure quality, and strategic decisions.

7) *Sector-Specific Guidelines:* Conduct research on sector-specific ESG integration strategies, particularly in agriculture and energy, to provide tailored guidance for firms in high climate-risk environments.

D. Overall Conclusion

This study provides a comprehensive assessment of ESG integration and climate-risk management in New Zealand businesses,

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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www.ijcsrr.org

highlighting the interplay between regulatory pressure, governance structures, sector-specific dynamics, and strategic decision-making. ESG adoption emerges as a critical driver of financial performance, resilience, and competitiveness, particularly when embedded in governance, stakeholder engagement, and operational processes.

The findings confirm that regulatory mandates, such as the 2023 climate disclosure requirements, enhance transparency but must be complemented by governance structures, sector-specific strategies, and proactive alignment with corporate strategy to achieve meaningful outcomes. High-performing firms demonstrate integrated ESG practices, leveraging internal resources, stakeholder engagement, and dynamic capabilities to transform climate risk into value creation opportunities.

Although this study has limitations, it provides actionable insights for policymakers, corporate executives, and researchers, emphasizing the importance of proactive ESG adoption, sectoral differentiation, and continuous adaptation in response to evolving climate and regulatory landscapes. Future research addressing identified gaps can further clarify the mechanisms linking ESG integration to financial performance and climate resilience, supporting sustainable corporate practices in New Zealand and beyond.

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International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
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International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 08 Issue 12 December 2025
DOI: 10.47191/ijcsrr/V8-i12-12, Impact Factor: 8.048
IJCSRR @ 2025
www.ijcsrr.org

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Cite this Article: Thennagama Rathnayakage, T. S. R. (2025). Comparative Corporate Responses to Climate Risk: ESG Integration in New Zealand Businesses. International Journal of Current Science Research and Review, 8(12), pp. 5996-6014. DOI: https://doi.org/10.47191/ijcsrr/V8-i12-12