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Governance Architecture as the Missing Link in Strategic ESG Integration: A Conceptual Framework for Banking Institutions

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Abstract—Environmental, Social, and Governance (ESG) integration is shifting from a voluntary practice to a global regulatory and supervisory expectation. While significant progress has been made in sustainability disclosures and climate risk modeling, banks and financial institutions still face challenges in effectively integrating ESG factors into their core business strategies and operations. This conceptual study argues that governance architecture, rather than disclosure practices or climate ambition statements, is the key to successful ESG integration. It synthesizes corporate governance theory, climate risk literature, and prudential regulation scholarship to propose a Governance-Centric ESG Integration Model (GCEIM) specifically designed for banking organizations. The model proposes that robust ESG integration depends on organizational structural alignment across board mandates and charters, C-suite incentives, enterprise risk management, and accountability processes. Advancing sustainable finance theory, this study reconceptualizes ESG integration in banking from a disclosure initiative to an organizational governance project. The study offers practical implications for banking executives and regulators seeking to enhance resilience and mitigate systemic risks amid climate uncertainty.

Keywords—Climate Risk, ESG Integration, Financial Stability, Governance Architecture, Sustainable Banking.

Introduction

Climate risks are materializing rapidly for banks worldwide. Escalating climate risk exposure, regulatory expectations, and stakeholder demands for banks to demonstrate leadership and accountability on environmental, social, and governance (ESG) performance have placed climate change on the agenda in a new way. Climate risk is increasingly framed not as an optional sustainability initiative but as an imperative for risk management, business resilience, and financial stability. Banks worldwide are increasingly seeing empirical analyses that quantify the impact of climate-related physical and transition risks on credit risk, non-performing loans, capital ratios, and macro-financial volatility (Jaungura et al., 2026; Masunda, 2025; Jalloul & Haque, 2025). The message is clearer than ever: climate risk is financial risk.

Banks are also uniquely exposed as entities within the broader economy. Unlike many non-financial firms, banks are subject to capital requirements, prudential regulation, systemic risk monitoring, and stress tests that increase both their risk exposures and the scrutiny of their risk management practices. Banks serve as intermediaries across sectors and regions, so their governance structures can amplify shocks that buffet the global economy. Furthermore, climate risk affects the banking sector through two channels: physical risk and transition risk. Physical risk stems from climate hazard events, biodiversity loss, and ecosystem failure. Transition risk stems from decarbonization efforts, carbon prices, technological innovation, and asset stranding (Ceglar et al., 2025; Di Febo, 2025). Physical and transition risks interact with banks' existing risk exposures, including credit, market, and liquidity risks (van der Walt & van Vuuren, 2025; Feridun & Güngör, 2020). Climate change also presents risks with different time horizons and risk profiles than traditional risks typically encountered by banks.

In response to the issues discussed above, many banks worldwide have increasingly engaged in ESG reporting and issued sustainable finance products (Garcia-Bernabeu et al., 2024; Ariani et al., 2025). Banks are signing on to international frameworks for sustainability disclosures, increasing green and sustainable lending, issuing

sustainability-linked bonds, and integrating climate change into their narrative reports and business plans. Research on ESG integration in the banking industry, including climate risk measurement, decarbonization strategies, sustainable finance, and risk disclosures, has increased significantly in recent years (Zervoudi et al., 2026; Muchiri et al., 2025). Although many banks around the world have made progress in identifying climate risks, issuing sustainability reports, and disclosing them to stakeholders, the growth of ESG reporting has not necessarily been matched by fundamental changes in how banks operate. For many banks, ESG issues are treated as risks to manage, reputations to maintain, or sustainability departments to empower rather than as core governance issues that must be embedded throughout the organization (Marpaung et al., 2025; Garefalakis et al., 2025). In other words, banks may issue strong sustainability reports without changing how their board of directors and executive teams are incentivized to make decisions that consider ESG factors.

The challenge is not merely cultural or intellectual but structural. While ESG factors, reporting standards, and taxonomies are rapidly evolving, banks' governance structures have not necessarily changed to incorporate sustainability into decision-making. Research on corporate governance shows that board structure affects bank stability, risk-taking, and managerial decisions (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). Corporate boards shape organizational outcomes by prioritizing. Boards of directors set the tone for corporations through their meeting agendas, executive compensation, and oversight of management. Climate risk is increasingly on the agenda for many corporate boards, but climate risk governance has not been embedded in banks' standard operating procedures. While some banks have instituted sustainability committees to oversee their ESG performance, many others have tasked existing committees with sustainability oversight without changing incentives.

Central banks and regulatory agencies recognize that climate risk is not ancillary to bank stability but central to it. Recent reviews of bank regulators worldwide show that many are beginning to incorporate climate risk into their macroprudential surveillance, expectations for banks, and risk-monitoring practices (Omeir & Vasiliauskaite, 2025). From climate stress tests to scenario analysis to climate value-at-risk (CVaR) measures, banks are encouraged to internalize climate risks in their capital planning and Internal Capital Adequacy Assessment Processes (ICAAP) (Rania, 2026; van der Walt & van Vuuren, 2025). However, stress tests and other reporting requirements do not automatically realign banks' board mandates, executive incentives, and enterprise risk management practices to prioritize climate risk. Whether banks meaningfully integrate ESG factors into their strategies and practices ultimately depends on their governance structures.

Hence, the issue is not one of measurement innovation or disclosure frequency; it is one of governance alignment. Climate value-at-risk modeling is improving (Rania, 2026; van der Walt & van Vuuren, 2025), and banks are releasing more climate risk disclosures than ever before, yet increased disclosure has not necessarily reduced risk (Marpaung et al., 2025; Garefalakis et al., 2025). Climate risk requires organization-wide responses, which require that authority, incentives, and accountability align across all levels of an organization. Evidence shows that board mandates affect bank stability and risk-taking (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). If banks want to embed ESG into their strategies and practices, they must do so in their governance as well. Unless boards of directors prioritize sustainability through mandates, risk committees assess climate risks as part of their regular responsibilities, and CEOs are held accountable for their firms' ESG performance by the board, ESG initiatives will likely remain operational rather than organizational. As regulators worldwide begin to hold banks accountable for their ESG reporting and sustainability disclosures (Omeir & Vasiliauskaite, 2025), there is a risk that banks will use this as an opportunity to greenwash rather than fully integrate sustainability into their organizations. By treating ESG integration as a governance problem, this article explores how banks can incorporate climate risk into their operating models.

This article proposes a Governance-Centered ESG Integration Model (GCEIM) that explains how banks can incorporate climate risk into their governance structures and why they should do so. This article draws on the literature on bank corporate governance (Alnabulsi & Khemiri, 2025; Yu & Hwang, 2026), climate risk management (Rania, 2026; van der Walt & van Vuuren, 2025), and changes in prudential regulators' approaches to climate change (Omeir & Vasiliauskaite, 2025) to develop a conceptual model for how banks can strategically integrate ESG factors into their governance and operations. By integrating these bodies of literature, this article seeks to reconceptualize ESG integration as a structural issue that banks must address to future-proof their businesses under climate uncertainty (Jaungura et al., 2026; Masunda, 2025).

This article is conceptual and does not empirically test GCEIM. Rather, it reviews the literature on governance, climate risk, and banking regulations to develop hypotheses about how and why banks should integrate ESG factors into their governance structures, which can be tested in future studies across countries and banking systems (Brandis et al., 2014).

Literature Context

Environmental, Social, and Governance (ESG) adoption has fostered an abundant and evolving body of literature on climate risk, sustainable finance, ESG investing, and corporate governance. Rapid growth is evident in the literature on climate risk exposure and its implications for bank stability (Jaungura et al., 2026; Masunda, 2025), the quality of ESG disclosures (Muchiri et al., 2025), the expansion of ESG data points reported by banks (Zervoudi et al., 2026), and the growing evidence of a positive relationship between ESG scores and banks' financial performance metrics (Marpaung et al., 2025; Garefalakis et al., 2025). Relatedly, research also examines bank corporate governance characteristics, such as board independence and diversity, and their impact on banks' levels of financial and environmental risk-taking (Ofori et al., 2025; Alnabulsi & Khemiri, 2025). In addition, regulatory expectations and supervisory activities have begun to incorporate climate risk and ESG considerations, and this is an emerging field of research (Omeir & Vasiliauskaite, 2025).

As the literature grows around each theme separately, there is a lack of cohesion in understanding the relationship between them. Many studies analyze exposure measurement, disclosure quality, governance characteristics, or regulatory reform as separate processes rather than as interrelated processes of institutionalization. Therefore, although research shows that climate risk matters financially for banks and that ESG integration is important, there is less research explaining how banks' governance structures affect the process of translating climate risk materiality into embedded strategic change. The literature can be grouped into four streams. First, there is evidence on how climate change affects banks' financial stability. Second, the literature demonstrates the importance of banks' ESG integration and reporting. Third, research highlights the importance of corporate governance in mitigating excessive risk-taking by banks. Fourth, the literature shows that regulators are starting to shift expectations to incorporate climate risk and ESG considerations. Each body of literature informs how sustainable banking will change, but convergence around the idea that boards mediate that change has not been well established. In what follows, this literature review will highlight what each stream explains about sustainable banking changes and where the gaps are in connecting that to the boards' structure and function (Halaj et al., 2024).

Climate Risk Financial Stability

Banks' exposure to climate risks has been shown to affect their financial stability significantly. Climate risk, whether physical or transition, affects bank credit risk, the share of non-performing loans, capital adequacy buffers, and systemic risk levels across banks in emerging market and developed economies (Jaungura et al., 2026; Masunda, 2025). This is largely explained by systematic risk theory, which argues that when many entities are exposed to the same shocks (i.e., highly correlated risks), stability will be affected, especially if exposures are clustered by sector or geography. Climate risks have dynamics distinct from those of typical business cycles. They tend to build up slowly, exhibit nonlinear impacts, and can have unforeseen regulatory-driven effects (Jalloul & Haque, 2025). As a result, climate risks may lead to credit risk that banks are not prepared for if they continue to use historic risk models.

The research rationale provides further evidence of how climate risks affect banks. For example, research on European banks finds that biodiversity loss increases bank credit risk because banks have higher exposure to sectors more affected by biodiversity declines, such as agriculture, real estate, food production, and energy-intensive sectors (Ceglar et al., 2025). Climate volatility can also cause macro-financial instability in MENA countries, affecting liquidity conditions, capital flows, and portfolio rebalancing trends (Jalloul & Haque, 2025). The transition risk literature also helps explain how climate risks can create financial instability through mechanisms such as green transition policies, carbon taxes, and asset stranding, which could lead to sudden declines in asset prices and liquidity shocks (Di Febo, 2025).

Measuring climate risks has also improved. Risk modeling now allows banks to calculate Climate Value-at-Risk (VaR), which can be integrated into banks' capital adequacy calculations (Rania, 2026). Banks can now use macroeconomic models that incorporate climate scenarios to conduct stress tests that account for climate risks (van der Walt & van Vuuren, 2025). The environment has been incorporated into banks' ICAAP frameworks, demonstrating that climate risks are measurable rather than abstract. However, while there is a growing body of research identifying and quantifying banks' exposure to climate risks, there is less research on how boards internalize these risks and whether they change their approach to governance as a result.

Integration and Institutional Performance

A growing body of literature documents how banks are increasingly providing ESG disclosures, issuing green loans and bonds, and shifting their lending portfolios toward more sustainable investments (Zervoudi et al., 2026; Muchiri

et al., 2025). These trends have been attributed to coercive and mimetic pressures, as banks feel pressure to integrate ESG criteria into their activities to be seen as legitimate players in global capital markets. Research also finds a positive relationship between ESG scores and banks' financial performance, such as returns on assets and lower stock volatility (Marpaung et al., 2025; Garefalakis et al., 2025). Stakeholder theory explains these relationships by arguing that banks that engage with stakeholders on environmental and social issues can build stronger relational capital and avoid future stakeholder conflicts.

However, much of this literature focuses on ESG integration as an output (e.g., disclosure reporting) or on its correlation with better performance metrics. As such, less attention is paid to the idea that ESG integration can also be a governance redesign challenge. Reports can increase without changes to board mandates that incorporate ESG-related risks into their risk oversight responsibilities. Bank executives can issue more sustainability reports without changing how they are compensated for managing environmental and social risks. Without looking inside the institution to see whether and how ESG is being embedded throughout the organization, we cannot know how sustainability growth will affect banks' formal governance systems.

Corporate Governance and Risk Oversight

Corporate governance literature can help fill this gap by clarifying how banks are institutionally transformed. Agency theory suggests that boards can mitigate agency conflicts by monitoring managers. Resource dependence theory suggests that boards provide resources to the firm. Risk governance literature shows that boards provide risk oversight. Within the banking industry, specifically, boards matter. Research shows that bank board independence, diversity, committee composition, and CEO duality are related to bank capital risk-taking levels, operational misconduct, and Z-scores (a measure of risk-adjusted performance) (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). Other research shows that more mature corporate governance practices are associated with higher disclosure scores, better internal controls, and more effective risk oversight (Yu & Hwang, 2026; Bella & Pratama, 2025). Boards matter for bank stability and how banks manage risks.

Within the banking corporate governance literature, less attention is paid to boards' roles in ESG. Boards tend to provide oversight of CSR activities. While there is overlap between CSR and ESG activities, integrating ESG considerations into enterprise risk management processes requires a change in how boards view their roles and authority within the firm. Boards influence bank stability, but we need to better understand how they will respond to the materiality of climate risk and ESG-related expectations.

Regulatory and Macro-Prudential Adaptation

Lastly, regulators and banks are increasingly expecting banks to consider climate risk and integrate ESG criteria into their operations. Climate risk is increasingly integrated into banks' stress testing exercises and capital planning processes (Omeir & Vasiliauskaite, 2025). Macro-prudential theorists recommend that central banks increase banks' capital buffers to account for climate risks and conduct scenario-based supervisory reviews that do the same (Nkwaira & Van der Ploeg, 2023). Supervisors are also beginning to expect that banks will incorporate climate change into their risk management practices (Feridun & Güngör, 2020). Expectations are changing at the institutional level, and climate risk/ESG integration is becoming part of banks' regulatory contracts.

However, just because regulatory expectations change does not mean that banks' boards and governance structures will change in response; banks can pass climate stress tests and provide disclosures on how they integrate sustainability considerations into their businesses without changing board members' mandates to include ESG-related risks. Banks can start providing ESG disclosures because regulators expect them to, without changing executive compensation structures to incentivize executives to take climate risks seriously. In other words, regulatory transformation does not always lead to banks' operational adaptation. However, it does lead to changes in banks' governance structures.

The Conceptual Gap and Contribution

The Climate Risk Exposure literature shows that climate risk is institutionally relevant (Masunda, 2025; Jaungura et al., 2026). Risk modeling research shows how banks can measure climate risks (van der Walt & van Vuuren, 2025). ESG integration literature shows that banks care about ESG disclosure (Zervoudi et al., 2026). Research on stakeholder perceptions shows that stakeholders appreciate banks' ESG efforts, which can lead to better firm performance outcomes (Marpaung et al., 2025). Corporate governance literature shows that boards impact bank

stability (Ofori et al., 2025). Risk governance literature shows that boards impact bank risk oversight (Alnabulsi & Khemiri, 2025). The literature on regulatory expectations shows that regulators care about banks' climate risks/ESG integration efforts (Omeir & Vasiliauskaite, 2025).

However, we do not know how boards will respond to these pressures. Climate risk is measured, but how are boards internalizing these measurements into their strategic decision-making? Boards matter for banks, but how will they matter in the context of ESG and climate risks? Regulations are changing expectations, but will banks change their formal governance structures as a result? Each body of research addresses important questions about sustainable banking, but it lacks an explanation of how boards mediate these changes.

Although climate risk modeling is improving each year (Rania, 2026), the question is no longer whether climate change is financially material for banks. Instead, the question is how banks are internalizing these risks. Without examining how banks' governance structures may create alignment or resistance to strategic changes related to climate risks, we do not know how banks can meaningfully change beyond disclosure growth (Ceglar et al., 2025). We need to theorize how boards will matter in the context of ESG and climate risks. This article aims to do that by bringing together the literature on climate risk, corporate governance, and regulatory expectations to present a theoretical framework that centers banks' boards as critical mediators of sustainable strategic change.

The Governance Gap in Banking ESG Implementation

Despite exponential growth in ESG disclosure standards, sustainable finance products, and climate risk modeling practices over the past decade, banks' structures have failed to keep pace with risk recognition. Climate risk is now considered material in academic financial stability literature (Jaungura et al., 2026; Masunda, 2025) and in supervisors' practices of setting expectations, climate stress testing, and macro-prudential monitoring (Omeir & Vasiliauskaite, 2025). However, banks have not fully adjusted their governance structures to reflect sustainability at the institutional level. Climate risk is assessed but not necessarily embedded in authority lines, incentives, or Enterprise Risk Management (ERM) processes. In practice, climate risk is known (and disclosed), but it is not yet fully built into banks' structures. Governance serves as the conduit through which banks respond to both supervisory expectations and risk considerations.

The corporate governance literature shows that board composition, board and committee specialization, clarity of oversight responsibilities, and executive management accountability significantly affect banks' risk-taking behavior and financial stability (Ofori et al., 2025; Alnabulsi & Khemiri, 2025). Boards matter because they formalize decision-making authority, information flows, and incentives within an institution. Despite this knowledge, ESG considerations are often delegated to the sustainability department or sustainability committee. Because sustainability remains an administrative function rather than a structural one, banks will struggle to align their practices with their disclosures fully. Three related governance gaps can be observed: (1) misalignment of authority at the board level, (2) misalignment of incentives within executive compensation, and (3) lack of full integration of climate risks into ERM. Isolating these gaps is illustrative but artificial. These gaps coexist and reinforce one another, creating an interdependent system of fragmentation that prevents lasting ESG change.

Structural Gap: Board Level Mandate

To begin with, banks must have an ESG mandate at the board level. Mentioning ESG topics at board meetings or focusing on ESG issues to maintain reputational standing is not enough. Boards determine their institutions' risk appetite, oversee capital decisions, provide long-term vision, and ensure their organizations' longevity. For banks, this is particularly important given the sector's macroprudential implications. Recent studies, however, have shown that ESG oversight is often split among board committees, folded into general CSR discussions, or delegated to sustainability councils rather than to risk committees (Yu & Hwang, 2026; Bella & Pratama, 2025). Even when boards have ESG-related structures in place, they are often only advisory.

When the board creates an advisory climate council, who is accountable for climate risks? The answer could be anyone, from the CEO to the Chief Sustainability Officer (CSO) to every member of the board. There is no clear sense of ownership for meeting climate goals. Research on governance explains that while board composition and diversity do matter, clarity of mandate and integration into decision-making processes matter just as much (Ofori et al., 2025). While banks can include discussion of climate risks in their board meetings, embedding specific ESG and climate risk mandates in the board, audit committee, and risk committee charters will ensure that meeting climate goals becomes central to capital decisions. This structural gap will become even more important as climate risk modeling continues to develop. From climate VaR analyses to scenario analyses, we know that banks' climate

exposures affect their capital requirements, asset valuations, and overall portfolio stability (van der Walt & van Vuuren, 2025).

However, who at the board level has the knowledge, authority, and capacity to oversee these models? Climate risk cuts across traditional silos of credit risk, underwriting standards, liquidity management, and investment horizons. Placing responsibility for climate risks with the CSO and excluding it from the risk governance structure risks that information will not flow to the board. The structural gap stems from the lack of ESG requirements built into banks' core governance structure.

Incentive Gap: Executive Compensation

The next gap lies within banks' incentive structures. Agency theory demonstrates that structures condition behavior. Compensation programs guide managerial decision-making. If most executive compensation is tied to short-term earnings goals, stock price, or quarterly bonuses, then meeting sustainability goals will take a back seat. This may be especially true for banks because of the downstream impact of their capital allocation and lending decisions. Studies show that better governance can moderate the relationship between banks' sustainability engagement and financial performance (Alnabulsi & Khemiri, 2025).

However, many of these studies examine the relationship between the extent of ESG disclosure and performance without considering whether banks' executive compensation plans are tied to meeting sustainability metrics (Marpaung et al., 2025; Garefalakis et al., 2025). Disclosure and compensation are separate levers of governance. A bank can publish an ambitious net-zero pledge while still not incentivizing its managers to make the necessary changes to meet that goal. Transition risk is one example of why this misalignment is problematic. Transitioning to net zero will require banks to shift their portfolios away from carbon-intensive industries (Di Febo, 2025). Shifting away from carbon-intensive industries could hurt banks' quarterly profits in the short term. If executive compensation plans continue to incentivize short-term profit maximization over long-term risk mitigation, then management will act accordingly. This incentive gap highlights how banks can publicly commit to institutional-level goals but not hold their managers accountable for implementing operational changes. Bridging the incentive gap requires tying executive compensation to specific sustainability metrics.

Whether that means successfully reducing climate risks in the loan portfolio, meeting decarbonization targets, or making risk-adjusted capital decisions, banks can ensure that their managers have a financial incentive to meet their sustainability goals. Without changes to bank managers' compensation plans, ESG goals will remain just that: goals.

Risk Alignment Gap: Incomplete Integration into Enterprise Risk Management

Banks need to integrate climate risk into their ERM frameworks. Climate risk modeling has advanced significantly in recent years (Rania, 2026; van der Walt & van Vuuren, 2025). However, identifying and integrating climate risks into existing risk frameworks lags. Most risk frameworks were built to analyze credit risk, market risk, liquidity risk, and operational risk. However, climate risk does not fit neatly into any of these buckets. Climate risks are subject to deep uncertainty and tipping points, and they are increasingly sensitive to regulatory changes.

Studies have found that climate risks affect banks' capital requirements, credit risks, and stability (Masunda, 2025; Jalloul & Haque, 2025). Regulators are also beginning to incorporate climate risks into their stress testing practices and supervision (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). However, at the institutional level, climate risks are often included only in a bank's annual scenario analysis exercise. Even if a bank identifies its climate risks, it may not fully integrate this information into its risk appetite statements, lending standards, portfolio composition, and capital planning. This creates a gap in which banks may identify climate risks and even discuss them at the board level, but not take action to adjust their risk profiles. Governance matters because risk oversight is only as good as its connection to authority and capital decisions. If climate risk is not built into banks' risk frameworks, it will not be fully institutionalized. There is a gap between knowing climate risks and building them into how banks operate.

The Interdependence of Governance Gaps

The three identified gaps (fragmented mandates, incentive disconnects, and partial embedding in ERM) exacerbate one another because they do not occur in isolation. Studies on governance find that boards affect institutional robustness, depending on their alignment with risk management practices and executive accountability structures (Ofori et al., 2025). Research on sustainability-linked practices finds that institutional resilience is strengthened to

the extent that boards enable the operationalization of these practices through governance mechanisms (Alnabulsi & Khemiri, 2025). Partial board oversight reduces pressure on executives to adjust incentives. Incentives disconnected from sustainability-linked outcomes create tensions in integrating climate risks. Partial embedding of climate risks in ERM reduces the information available to support board oversight.

Institutional theory shows that reforms are more prone to decoupled, isomorphic change if they fail to form an interconnected system. Climate risk research validates the direct effect of material exposure (Jaungura et al., 2026), and governance research validates the moderating role of board oversight (Ofori et al., 2025). However, without comprehensive governance systems, each relationship applies only at times. ESG remains performative. As such, banks' ESG governance gap stems less from a lack of disclosure know-how or the ability to build risk models. Fragmentation in banks' ESG approaches implies a decomposition of the institution itself. Rebuilding banks' capacity for ESG integration is not about better reporting. It is about reconceptualizing ESG integration as a governance exercise.

Governance-Centered ESG Integration Model (GCEIM)

Prior sections found that technological capability is not the primary limiting factor for ESG integration, nor is it ambiguity in regulations or insufficient disclosure standards. Fragmented responsibility within governance structures is the primary barrier. Climate risk has been identified as material for banks worldwide (Masunda, 2025; Jaungura et al., 2026). Regulatory agencies are incorporating environmental risk into supervisory expectations (Omeir & Vasiliauskaitė, 2025), climate-informed stress testing (CIS) (Feridun & Güngör, 2020), and even prudent review processes. Banks have also developed climate value-at-risk models (Rania, 2026) and scenario-analysis stress tests (van der Walt & van Vuuren, 2025). While many advancements have been made in ESG integration, transitioning to sustainability practices remains sporadic at best, not because of a lack of understanding from a risk or analytical perspective, but rather from a governance perspective.

In banks, governance serves as the internal translation mechanism that converts external risks into bank operations. Governance determines which authorities matter, how information flows, how incentives are allocated, how risk is defined, and who is held accountable. If climate risk is deemed material from a data analytics standpoint but does not reflect in the bank's governance, a misalignment arises between what is known and the actions taken. ESG integration is often viewed as an information-sharing problem, but it is an issue of institutional translation. The Governance-Centered ESG Integration model (GCEIM) shifts the framing of ESG integration from a strategic problem to an organizational design problem. The focus is not on whether banks are disclosing ESG data, but on whether our authorities, incentives, and risk governance are designed to translate climate risk materiality into our business practices. See Figure 1 for the cohesive logic across all four pillars.

Figure 1. Governance-Centered ESG Integration Model (GCEIM)

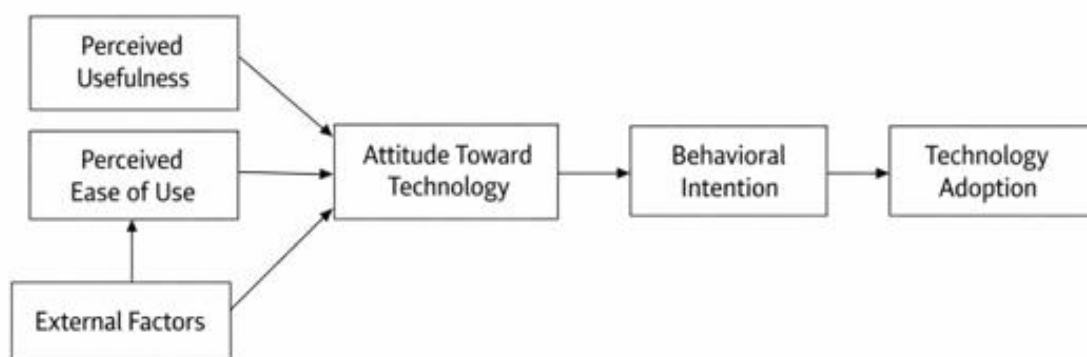


Figure 1: Conceptual Model of Technology Adoption

Note. The model illustrates four governance pillars—board mandate integration, executive incentive realignment, ERM embedding, and strategic accountability loops—linking climate risk materiality to strategic ESG integration. Arrows represent directional and feedback relationships.

Governance-Centered ESG Integration Model (GCEIM) Tables

Table 1
Construct Definitions (GCEIM)

Construct	Definition in This Article	Example Indicators (For Future Empirical Testing)
Board-Level ESG Mandate Integration	Formal incorporation of ESG/climate oversight into the board charter and risk committee authority.	<ul style="list-style-type: none"> • ESG mandate in charter • Risk committee climate oversight • Frequency of climate agenda items
Executive Incentive Realignment	Compensation links to measurable sustainability and climate-adjusted risk outcomes.	<ul style="list-style-type: none"> • % variable pay tied to ESG metrics • Climate-adjusted KPIs • Long-term incentive ESG targets
ERM Climate Embedding	Integration of climate variables into continuous Enterprise Risk Management (ERM) decision rules.	<ul style="list-style-type: none"> • Climate embedded in risk appetite statements • Climate-adjusted underwriting rules • Sector exposure limits • Capital buffer methodologies
Strategic Accountability Loops	Internal monitoring and feedback mechanisms that maintain alignment over time.	<ul style="list-style-type: none"> • Internal audit ESG reviews • Board ESG performance evaluations • Director of climate competency training • KPI recalibration cycles

Table 2
Mechanism Logic (How the Model Works)

Pillar	Primary Mechanism	Why It Matters for Banks
Board Mandate Integration	Authority + Fiduciary Accountability	Converts climate materiality into strategic oversight and capital discipline.
Incentive Realignment	Behavioral Reinforcement	Makes long-horizon climate resilience operationally rational for executives.
ERM Embedding	Decision-Rule Internalization	Ensures climate analytics shape underwriting, exposure limits, and capital planning.
Accountability Loops	Dynamic Adaptation	Prevents symbolic compliance and keeps governance aligned as climate risk evolves.

Pillar One: Formalized Board-Level ESG Mandate Integration

The first pillar focuses on embedding ESG responsibilities within the board of directors' stewardship. The board should not be treated as a token entity within banks and financial institutions – it is where fiduciary responsibility and accountability are exercised. From defining risk appetite to approving capital plans and portfolio allocations and monitoring senior management, boards play a critical role within institutions. Research shows that board structure, independence, mandate, and committee focus all affect institutional risk and stability (Alnabulsi & Khemiri, 2025;

Ofori et al., 2025). However, in many organizations, sustainability remains tucked away within CSR committees or sustainability advisory boards rather than clearly defined within risk governance committees (Yu & Hwang, 2026; Bella & Pratama, 2025).

When responsibilities for sustainability are not clearly defined within the board's mandate, a disconnect occurs. If boards review sustainability reports but lack express authority to adjust capital plans or concentration limits based on those reports, no one is accountable for revising plans to reflect climate risks. When climate VaR modeling becomes commonplace (van der Walt & van Vuuren, 2025; Rania, 2026) but board mandates do not formally include climate factors, governance misalignment emerges.

Within the GCEIM, boards must explicitly state that ESG and sustainability fall within their stewardship. This requires that climate risks be considered in risk appetite statements, capital plans, and portfolio concentrations. Boards should discuss climate risks as they would any other risk. By placing explicit focus on these topics within the board's mandate, ESG considerations move from being merely a reporting topic to being part of the institution's governance structure. This is especially important for banks and financial institutions, as misgovernance in these industries can ripple through the financial system.

Pillar Two: Executive Incentive Realignment

The second pillar focuses on embedding sustainable practices within management compensation structures. According to agency theory, managers care about the contracts they enter. They sign within the institutions where they work. Compensation structures shape how managers prioritize the short-term versus the long-term, their risk-taking behaviors, and what they prioritize. If CEOs and presidents are compensated based on quarterly earnings per share or return on equity, climate and long-term sustainability will take a back seat.

For example, transition risk can affect banks' ability to shift portfolios away from carbon-intensive assets proactively. Transition risk encompasses decarbonization policies, carbon taxes, and asset stranding, which may require shifting portfolios sooner than anticipated (Di Febo, 2025). However, shifting too soon can carry an opportunity cost. Managers may be discouraged from making these shifts if their compensation structures do not promote sustainability-aligned decisions.

While research on ESG reporting has found a relationship between sustainability performance and institutional performance (Marpaung et al., 2025; Garefalakis et al., 2025), little research has examined whether banks and financial institutions link compensation to sustainable metrics. Research shows that corporate governance can moderate the relationship between institutions and sustainability performance (Alnabulsi & Khemiri, 2025). This suggests that companies with strong governance embed sustainability into compensation contracts, influencing how long ESG efforts will last. However, if sustainability is not part of management contracts.

The GCEIM requires banks and financial institutions to include sustainability metrics in C-level compensation plans. These metrics can take several forms, such as linking bonuses to climate-adjusted returns, reducing risk-weighted assets, meeting decarbonization targets, or meeting sustainable lending requirements. By incorporating these metrics into long-term bonuses, banks can ensure managers act in ways that strengthen the bank over the long run. Embedding sustainability into compensation structures turns sustainable banking from a buzzword into a contractual requirement.

Pillar Three: Enterprise Risk Management Embedding

The third pillar involves integrating climate risks under institutions' enterprise risk management (ERM) frameworks. We know climate risks substantially impact banks and financial institutions (Masunda, 2025; Jalloul & Haque, 2025). Regulators have taken notice by including climate risks within stress tests and macro-prudential analyses (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). However, many banks and financial institutions have not fully integrated climate risks into their risk management practices. Too often, climate risks are discussed at the bank level during stress tests but are not part of everyday risk governance.

ERM frameworks were initially designed to quantify financial risks – interest rate risk, credit risk, and market risk – using historical data and risk models that assumed risks would follow a normal distribution. Climate change does not conform to these assumptions. We know climate risks have long time horizons, but they also have unpredictable tipping points and are subject to regulatory changes. While we can quantify climate value at risk to show how much capital is at risk (Rania, 2026; van der Walt & van Vuuren, 2025), knowing the number alone does not equate to ERM integration.

Integrating climate risks into the ERM pillar requires banks and financial institutions to include climate risks in risk appetite statements, underwriting guidelines, credit approval processes, concentration limits, and capital

allocation. Instead of treating climate risks as an annual exercise in stress testing, climate risk should inform how banks allocate capital on an ongoing basis. By integrating climate risks into ERM, banks ensure that climate risks are incorporated into their capital requirements, alter underwriting standards, and, in the long term, shift away from carbon-intensive industries.

Pillar Four: Strategic Accountability Loops

The fourth pillar focuses on developing feedback loops to ensure the other pillars are upheld. Any government change can become watered down if there are no mechanisms in place to monitor and ensure the changes are happening. Risk governance tells us that information is power. Without proper internal controls, auditing procedures, and institutional learning, risk governance will be ineffective. Feedback loops can include, but are not limited to, internal audits of sustainability key performance indicators (KPIs), annual board reviews to ensure ESG efforts are in place, mandating climate literacy for board members, and incorporating climate risks into management compensation discussions. As climate risks evolve and regulators raise their expectations for banks and other financial institutions, these entities must continue to adjust their practices.

This final pillar creates a coherent system. The board of directors can influence management compensation. Management will be more inclined to act on information that affects their compensation. If climate risks are included in ERM, it will generate information for the board to consider. As previously stated, without feedback loops, the changes suggested in the other three pillars will not be sustainable.

Integrated Governance Architecture

The four pillars operate as an interdependent governance ecosystem rather than as discrete interventions. Clarifying the structural mandate enhances incentive discipline. Incentive realignment reinforces ERM integration. Embedding ERM strengthens the informational foundations for board oversight. Accountability loops sustain long-term coherence amid environmental volatility.

This integrated governance architecture addresses a structural gap in existing ESG scholarship. Climate risk research identifies material exposure (Jaungura et al., 2026; Masunda, 2025). Governance scholarship explains oversight discipline (Ofori et al., 2025). Regulatory research documents the evolution of supervision (Omeir & Vasiliauskaite, 2025). The GCEIM synthesizes these streams into a unified institutional design framework that explains how sustainability objectives become structurally embedded within banking governance systems.

By positioning governance architecture as the mediating mechanism between environmental risk exposure and institutional resilience, the GCEIM advances sustainable finance scholarship beyond disclosure metrics and performance correlations. ESG integration becomes a structural governance transformation project essential to systemic stability in an era of climate-driven uncertainty.

Propositional Development

Building on the integrated governance framework, the following propositions are advanced for empirical validation:

Proposition 1: Banks with formally codified ESG mandates within board risk committees will exhibit higher levels of climate risk integration within enterprise risk management systems.

Proposition 2: Executive compensation structures explicitly linked to sustainability performance metrics will positively moderate the relationship between ESG adoption and institutional financial stability.

Proposition 3: Continuous embedding of climate risk variables within ERM will reduce transition-related volatility in capital adequacy ratios.

Proposition 4: Institutions with an integrated governance architecture across all four pillars will demonstrate greater resilience under climate stress scenarios than institutions with fragmented governance structures.

These propositions extend governance theory into the domain of climate-driven financial transformation and invite cross-jurisdictional empirical testing.

Leadership Implications

The governance-centric ESG approach proposed in this paper has implications for leadership theory and practice in banks. Governance reforms may provide the structural mechanism for ESG integration. However, leadership mindsets determine whether institutional directives lead to a truly paradigmatic shift. Governance mandates authority

and responsibility. Leadership action actualizes that authority. As such, ESG integration should also be considered a leadership issue in banks.

Climate risk is qualitatively distinct from business-as-usual financial risks. It does not follow economic cycles. Rather, it is characterized by long-term timeframes, policy discontinuities, and nonlinear effects (Rania, 2026; Di Febo, 2025). Leadership theory examines how executives interpret external contexts and guide organizational action amid ambiguity. In the context of climate risk, this means leaders should take a proactive stance on ESG integration. Climate risks have already become material for banks worldwide (Masunda, 2025; Jaungura et al., 2026). Banks need leaders who take these risks into account when allocating capital, underwriting, and making investment decisions.

According to the upper echelon theory, organizational outcomes are partly a reflection of the CEO's traits and background. Climate VaR models and regulatory stress tests are expected to be used more frequently by bank supervisors in the coming years (Omeir & Vasiliauskaite, 2025; van der Walt & van Vuuren, 2025). If that is the case, banking leaders should be environmentally literate enough to understand what these tests mean and how to respond to them. The use of sophisticated climate stress-testing models by supervisors will also increase the information requirements for boards and leaders. Leaders who lack the cognitive ability to process climatic risks may neutralize the intended effect of governance reforms.

Adaptive leadership theory may also be relevant here. Climate change can be considered a wicked problem. Solutions to climate change are constantly evolving in response to new scientific data, regulatory sandboxes, and international politics. Leaders who apply adaptive leadership principles prioritize learning cultures, team-based problem solving, and experimentation. Governance has also been shown to moderate the relationship between institutional quality and banking stability (Ofori et al., 2025; Alnabulsi & Khemiri, 2025). However, institutional culture, which influences behavior and mindset, is shaped by leadership. Leaders should shape banks into learning organizations that embed sustainability metrics into risk, treasury, business development, and compliance practices, not just ESG teams.

Executive compensation structures also highlight leadership considerations for governance-centric ESG integration. According to agency theory, compensation plans shape managers' actions. Leaders also shape what is considered normal in an organization through symbolic actions and budgetary decisions. Research on ESG news and firm value has yielded mixed results (Marpaung et al., 2025; Garefalakis et al., 2025). While some studies suggest that engaging with sustainability may reduce the risk of bank failure, these results can be reversed if leadership does not “walk the talk.” In other words, leaders should exemplify their commitment to ESG integration through both compensation structures and strategic decisions. If leaders are not aligned with climate considerations, ESG initiatives can easily fall to the wayside.

Leadership considerations also arise from how banks position themselves with regulators and the market. Regulators are expected to increase the use of climate metrics in their supervisory practices (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). Leaders should be prepared to respond to changing regulations while remaining competitive in the long term. Banking leaders should strategically balance meeting supervisors' requests with innovation in sustainable products, portfolios, and capital allocation decisions. Simply increasing disclosures is not paradigm-shifting. Leaders should ensure that integrating sustainability measures changes how banks do business.

Discussion and Practical Implications

Accountability has leadership implications. For banks, stability and public perception go hand in hand. Climate risk could very well affect how customers, investors, and capital markets view a bank. Leaders who disregard sustainability as a long-term threat to the bank's resilience may do more harm than good to the bank's stability. Leaders who can align governance, incentives, and risk-integration practices will benefit the bank's reputation in the long run. Banks need both a governance structure and leadership action to fully integrate ESG. Effective governance reforms can give banks the authority to act. However, without leadership action, those governance changes can stagnate into nothing more than a ticking-box exercise. Leaders also need the proper governance mechanisms. If a bank lacks strong board oversight of climate risks and ESG initiatives, will leadership continue to make climate-conscious decisions in the face of adversity? The convergence of leadership mindsets and governance mechanisms will determine how banks fare in this new age of sustainability and climate risks.

Policy and Regulatory Implications

The governance-focused ESG framework presented in this paper is also relevant to policymakers and financial regulators. Climate risk has entered the conversation about prudential regulation; however, most regulatory efforts have focused on disclosures, stress testing, and scenario analysis (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). These types of regulation focus on measurement and disclosure practices. Although research has found that climate risk affects financial stability (Jaungura et al., 2026; Masunda, 2025), disclosures and stress tests will not be sufficient unless they are embedded in firms' governance.

Central banks and supervisors have used climate stress testing and scenario analysis as part of the supervisory review process (Omeir & Vasiliauskaite, 2025). Stress tests and scenarios recognize that banks' capital ratios, asset prices, and liquidity could be affected by physical risks and/or transition risks. However, studies around board effectiveness have found that banks with effective oversight and boards are better able to mitigate these risks (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). Stress tests are a measurement exercise. The exercise can measure the magnitude of these risks, but it does not guarantee that climate risk is integrated into a bank's governance structure. Banks could pass a climate stress test and then do nothing about it.

Importantly, supervisors should include another aspect in their Pillar 2 or SREP assessments, namely, how climate-related risks are baked into banks' governance. Including this in assessments could tie regulation to what research finds drives better risk management practices (Ofori et al., 2025). Additionally, studies showing that board characteristics can affect bank stability (Alnabulsi & Khemiri, 2025) suggest that board mandates can affect sustainability performance. If supervisors assess how clear bank boards are about their mandates to manage climate risks and whether banks have risk committees focused on these risks, banks will have an incentive to integrate climate risks throughout the organization to receive better supervisory ratings.

Policy recommendations could also include board competency requirements or expectations regarding climate risk awareness. Climate VaR and scenario analysis will continue to develop and become more robust (van der Walt & van Vuuren, 2025; Rania, 2026). Supervisors want to ensure that banks can understand and use these results. Studies have shown that climate stress testing can reveal how climate-related risks affect capital requirements under a given scenario (Rania, 2026). Regulators could consider requiring disclosure of board expertise in climate issues or requiring that boards be climate-literate as part of their competency evaluations.

Another area that could benefit from more regulatory guidance is executive compensation. Currently, ESG frameworks focus on what information should be disclosed about sustainability efforts and initiatives (Marpaung et al., 2025; Garefalakis et al., 2025). Few, if any, ESG frameworks address whether executive compensation is aligned with longer-term climate risks. One study found that supervisory governance moderated the relationship between banks' ESG scores and their ESG performance (Alnabulsi & Khemiri, 2025). This suggests that an effective board could influence how banks' ESG efforts translate into ESG performance. Regulators could issue guidance on the disclosure of executive compensation tied to sustainability metrics. This could increase accountability and reduce greenwashing.

On an international stage, supervisors need to align their expectations. If one country expects banks to have certain climate governance structures in place while other countries do not, there will be weak links in the global banking system. Studies have shown that climate change can affect macroeconomic indicators across countries (Jaungura et al., 2026; Masunda, 2025). International organizations, such as those responsible for sustainability frameworks and the FSB, could incorporate climate governance into their guidelines. This would allow supervisors worldwide to evaluate banks' climate governance and increase consistency.

Regulators also need to consider transition risks. Transition risks can come from changes in carbon prices, regulations on polluting industries, and shifts in clean energy markets (Di Febo, 2025). One study showed that, in a stress-testing scenario, introducing a carbon tax could affect the value of banks' assets and the overall riskiness of their portfolios (van der Walt & van Vuuren, 2025). This means regulators need to consider climate issues when evaluating macroeconomic changes. There needs to be communication between governments making policy decisions on climate change and the regulators that will have to deal with the stress those decisions may bring.

When creating regulation, it is important to balance principles-based and prescriptive approaches. Prescriptive regulation of climate governance could lead regulators to enforce governance structures that do not fit every bank's model. On the other hand, principles-based regulation can be easy to ignore. One study highlighted that both the board's formal mandate and its operation within the bank's context mattered (Ofori et al., 2025). Supervisors should provide guidance on sound climate governance. Factors that should be included are coherent governance of climate risks, accountability for their management, and whether the banks' ERM includes climate risks.

Lastly, regulators need to recognize that banking organizations must begin managing these risks before they escalate into a crisis. Climate risk poses a challenge for bankers because it unfolds over longer periods than standard financial reporting timelines (Rania, 2026). We already know that these risks could affect banking organizations (Jaungura et al., 2026; Masunda, 2025). By not integrating climate risk mitigation into their day-to-day operations, banks could find themselves severely underprepared for climate shocks. Supervisors who assess how banks are mitigating climate risks today through their governance and require rigorous stress testing will help ensure banks are better prepared.

In conclusion, there has been significant regulatory activity regarding the incorporation of climate risk into the banking industry. However, most of this activity has focused on how climate risk is measured and disclosed. Climate risk needs to be incorporated into banks' governance, and this starts with regulation.

Theoretical Contributions

This article contributes to several bodies of theory, including those focused on corporate governance, sustainable finance, ESG, and climate risk. Prior research has made important inroads into understanding ESG disclosure (Marpaung et al., 2025; Garefalakis et al., 2025), the impact of climate exposure on financial stability (Jaungura et al., 2026; Masunda, 2025), and corporate governance mechanisms in banking (Alnabulsi & Khemiri, 2025; Ofori et al., 2025), though largely in isolation from one another. This study connects these literatures by conceptualizing ESG integration as a governance architecture. Positioning sustainability embedding as an institutional design issue shifts the understanding of this phenomenon from reporting and outcomes toward structure and systems.

Contribution to Corporate Governance Theory

The current study first contributes to the theory of corporate governance. Corporate governance research examines how board structures and composition, oversight functions, and executive-level accountability influence organizational risk-taking behavior and financial performance (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). While informative for understanding operational or financial risk appetites, this research rarely theorizes climate risk exposure as a function of governance architecture. However, as research elsewhere in this article has established, climate risk modeling indicates that banks face existential capital adequacy risks from environmental shocks (Rania, 2026; van der Walt & van Vuuren, 2025).

Advancing an integrative model of ESG-specific governance requires specifying how board mandate clarity, incentive design, ERM practices, and executive/board accountability practices interact. A corporate governance framework for embedding ESG factors provides empirical evidence that leadership cohesion and oversight influence institutional risk-taking behavior and performance outcomes (Alnabulsi & Khemiri, 2025; Ofori et al., 2025). This study contributes to the literature by arguing that bank resilience under climate uncertainty is conditioned not only by board independence but also by alignment and integration across key governance "subsystems". Conceptualizing these components as a system moves beyond classical agency-theory explanations of governance behavior toward a theory of institutional fit.

Contribution to Sustainable Finance and ESG Literature

Second, this article bridges the sustainable finance literature with corporate governance theory. To date, most ESG research has focused on the association between ESG disclosure levels and organizational performance (Marpaung et al., 2025; Garefalakis et al., 2025). Other studies show that governance practices significantly influence the quality of sustainability reporting in financial institutions (Oyerogba et al., 2024). However, this body of research rarely conceptualizes ESG integration as a systemic governance architecture that embeds climate risk within institutional design.

While establishing robust correlations, this research often treats ESG integration as an output variable rather than as a process shaped by organizational structures. Meanwhile, climate risk researchers have examined how environmental exposures affect financial performance indicators such as capital adequacy (Jaungura et al., 2026; Masunda, 2025) but have not yet theorized why some institutions are more affected than others. Incorporating governance into this equation suggests that differences in governance architectures may explain performance discrepancies under climate stress. The framework proposed in this study argues that simply expanding ESG disclosures is not necessarily aligned with risk reduction unless the organization is governed in a way that reinforces these practices. This moves scholarship beyond noting inconsistent relationships between sustainability reporting

metrics and firm performance across banking systems to explaining why these inconsistencies may arise.

Contribution to Climate Risk and Prudential Regulation Scholarship

Third, this article contributes to the scholarly understanding of climate risk and prudential regulation by underscoring the importance of governance architecture. Modeling the quantitative impact of environmental exposures on banking organizations through stress testing has generated important insights into the capital adequacy risks associated with climate change (Rania, 2026; van der Walt & van Vuuren, 2025). Recent analytical work by regulators has shown that supervision is evolving to address these issues (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). However, stress testing banks for climate risk does not inherently make them more resilient to this risk.

In addition to identifying vulnerabilities, banks must be able to respond when they encounter stress. Arguably, governance determines how well an organization can absorb stress. Prior research linking corporate governance practices to banking stability (Ofori et al., 2025) supports this conclusion. This study amplifies that point by applying it specifically to climate stress and emphasizing the role of supervision. Incorporating governance evaluations into future research on climate risk can extend theory on prudent supervision beyond disclosing climate risks to requiring robust governance around those risks.

Cross Theory-Theoretical Synthesis

In addition to the theories mentioned above, this article lends itself to integration across theoretical perspectives. Agency theory can explain why board and executive-level buy-in is critical to embedding any new organizational priority; resource dependence theory can illustrate how the board can play a crucial role in facilitating environmental scanning and ensuring that responses to stress are well-informed. Risk governance theory can explain the need for institutional mechanisms to maintain strategic oversight amid uncertainty. Previous scholarship on effective governance in banking implicitly draws on each of these theoretical traditions (Alnabulsi & Khemiri, 2025; Ofori et al., 2025) but stops short of applying them specifically to the context of transformational climate risk.

The governance-centered ESG integration model presented here intentionally overlaps with each of these theoretical perspectives, providing a multidisciplinary lens for understanding how banks can respond to rising climate risks. Connecting established insights on the materiality of climate risk (Jaungura et al., 2026; Masunda, 2025) with arguments about the coherence of governance mechanisms (Ofori et al., 2025) and evolving approaches to supervision (Omeir & Vasiliauskaite, 2025) reduces theoretical fragmentation and synthesizes these contributions for readers.

Propositional Advancement and Future Research

Lastly, this article contributes by developing propositions. While there are certainly studies documenting relationships between governance practices and bank stability (Alnabulsi & Khemiri, 2025; Ofori et al., 2025) and between ESG disclosure and firm value creation (Marpaung et al., 2025), specific hypotheses about how governance and climate resilience interact are less common. Developing propositions that hypothesize relationships among board mandate, incentive alignment, ERM integration, and stability under climate stress conditions establishes a starting point for future theoretical development.

The propositions put forth in this article could be tested through quantitative studies using international banking data or through longitudinal research designs examining governance changes over time. Future qualitative research could also assess how individual cognition at the executive level and board dynamics affect ESG integration, given shifting regulatory expectations (Omeir & Vasiliauskaite, 2025). Identifying governance architecture as the mechanism through which bank-level climate resilience will be determined is the primary way this article advances theory.

Conclusion

Environmental, social, and governance (ESG) considerations are increasingly integrated into the global banking sector from a structural risk perspective. Recognition of climate exposure as a reputational risk has given way to concerns about financial stability, capital adequacy, and asset valuation (Jaungura et al., 2026; Masunda, 2025). Regulators are increasingly treating climate as part of supervisory stress testing and micro- and

macroprudential oversight processes (Omeir & Vasiliauskaite, 2025; Feridun & Güngör, 2020). While promising, ESG integration strategies can still lack coherence at many banks.

The purpose of this article is not to suggest that banks lack disclosure protocols or stress-testing capabilities. On the contrary, ESG disclosure requirements are proliferating, and climate risk modeling continues to improve (Rania, 2026; van der Walt & van Vuuren, 2025). Instead, ESG initiatives are often integrated into banks at the administrative rather than the institutional level. Research on governance shows that boards matter: factors such as board composition and executive compensation affect stability (Ofori et al., 2025; Alnabulsi & Khemiri, 2025). This article takes that observation one step further by treating ESG integration as a function of governance.

By decomposing the ESG integration process into four structurally cohesive dimensions—board mandate, Executive compensation, Integration into risk management, and Accountability loop—the governance-based ESG integration framework presented in this article approaches sustainability embedding as a redesign of the governance apparatus. It shows how banks can turn climate risk awareness into resilience through organizational design variables that mediate between supervisory pressure and the institutional risk profile.

Contributing to both the literature and practice, this article also drew on the literature on corporate governance, sustainable finance, and climate risk modeling to develop its core argument. To that end, it moved the corporate governance conversation into uncharted waters by examining how governance relates to uncertainty. It also reconceptualized sustainable finance and banking research around the concept of institutional fitness. Finally, it integrated firm-level governance evaluation into the climate risk discussion. By bridging gaps among these three research streams, this article lays the groundwork for empirical analysis of how banks' governance structures affect their ability to weather climatic uncertainties.

Leadership will determine how effectively boards execute on their mandates, and the regulatory landscape will continue to evolve, placing supervisory pressure on banks to integrate sustainability considerations. Disclosure alone will not create resilience if banks lack the organizational capacity to respond to climate risks. Supervisors who look beyond disclosure when evaluating banks' climate profiles and assess banks' governance architecture alongside stress-testing metrics may also help banks become more resilient. What is clear is that the successful integration of sustainability considerations into banks depends on how banks' governance structures align with sustainability priorities across three dimensions: incentives, risk integration, and oversight.

Testing this article's theory across countries and banking systems is one way future research can build on this framework. Others might investigate how regulatory pressure moderates this relationship. Additionally, how do bankers' perceptions of climate risk affect their approach to transforming their banks' governance? Regardless of the specific research question, longitudinal studies that track how banks' governance evolves as we enter a period of climate transition will be particularly illuminating. Anecdotal and hypothetical discourse around ESG integration obscures as much as it reveals. At its core, banking sustainability is about governance.

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